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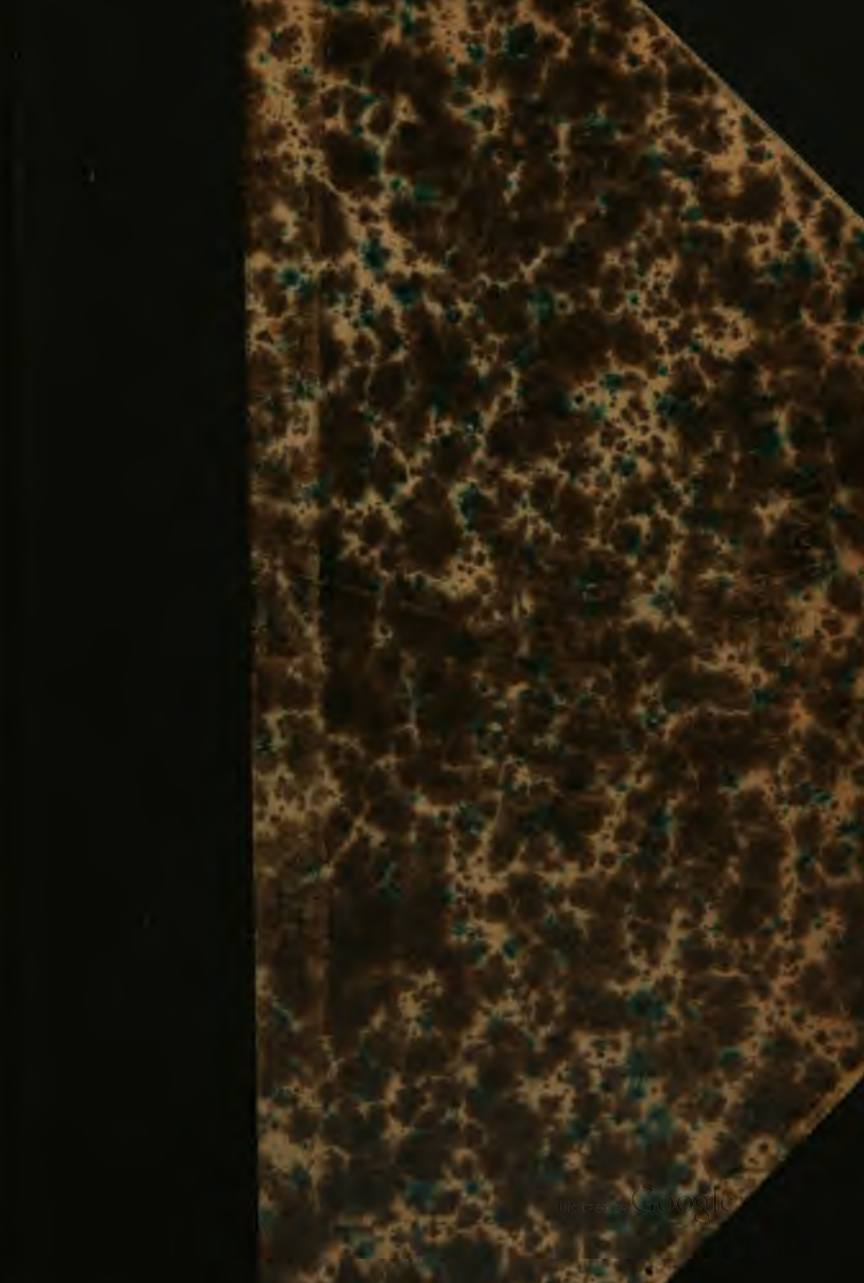

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KEY

TO

THE SYSTEM OF VICTORIAN PLANTS.

I.

DICHOTOMOUS ARRANGEMENT OF THE ORDERS,

GENERA AND SPECIES OF THE NATIVE PLANTS,

WITH

ANNOTATIONS OF PRIMARY DISTINCTIONS

AND

Supporting Characteristics;

BY

BARON FERD. VON MUELLER,
K.C.M.G., M. & PH.D., F.R.S.

"EXULTABIT SOLITUDO ET FLOREBIT."—*Isaia*, XXXV. i.

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Dedicated

TO

THE HONORABLE ALFRED DEAKIN, M.L.A.,

CHIEF SECRETARY OF THE COLONY VICTORIA,

THROUGH WHOSE SCHOLARLY INTEREST

ALL

SCIENTIFIC PROGRESS IN THIS HIS NATIVE LAND IS STRENUOUSLY PROMOTED,

AND

UNDER WHOSE GENEROUS MINISTERIAL AUSPICES

This Volume has been Elaborated.

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PREFACE.

THIS work owes its origin to a desire, expressed by the Field-Naturalists' Club of Victoria, at the instance of the Honorable Dr. Dobson, that its members should be provided with a literary guide similar to the meritorious "Handbook of the Plants of Tasmania," written some years ago by the Rev. W. Spicer, for facilitating the study of our native flora, particularly during botanical excursions; and it was especially urged by the honorable and distinguished gentleman, that the dichotomous method of Lamarck, which was followed by our late lamented friend for his book, should also be adopted for the Victorian work. The flora of our colony being doubly as rich in species as that of Tasmania rendered the task, even under ordinary circumstances, far more laborious; moreover, it was felt by the writer of these lines, that an effort should be made, while applying the difficult method mentioned, not to disrupt in any way the chain of affinity, which links the orders and the genera and the species of plants naturally together. Furthermore, the necessity of supporting the very brief dichotomous notes by diagnostic descriptions was also at once recognised; hence the dichotomous "Key" was required to be extended to an abridged "Descriptive Flora." To render the contemplated work acceptable as well to the juvenile tyro as to the advanced student—it being the first special and early completed work on the indigenous vegetation of this colony—it became imperative, to express the characteristics of the plants not only with etymologic precision and logical clearness, but also with the utmost of plainness and organographic simplification. The work indeed was to be rendered alike available for elementary schools

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and for high educational institutions; it was to serve the amateur-gatherer of plants in the field as well as the professional investigator in the exercise of stern duties; and yet such a work was to be inexpensive, concise and reliable. How far all these aspirations have been realized, the practical use of the work now completed must demonstrate; the ardent endeavour of the author at all events has been, to succeed in the use of a method, which was chosen not at his free will, and under such restraint to produce a work, which would render the study of plants in our dominion more universal, and which could with some credit to the colony be placed even into the libraries of the world.

The organographic alterations, largely introduced into these pages for the first time, in contrast to zoologic terms, have been ventured on only tentatively, but without thereby in any manner impairing the use of the work; indeed they arose mainly from a desire of the author, to simplify the wordings for organs of plants in a book, written especially for almost a new country and particularly for the juvenile portion of its population. This subject of desirable changes in organography by simplifying verbiage and by keeping apart from each other zoographic and phytographic expressions, has comprehensively been discussed in a treatise, which was written for the Sydney-meeting of the Australian Association for the advancement of Science, and which has been promulgated by the Royal Society of New South Wales already. The main reasons for adopting some alterations in the Candollean system, also for the present publication, have been set forth some years ago in the "Systematic Census of Australian Plants with chronologic, literary and geographic annotations." Before any opinion is formed on these novations, the writings referred to should be studied with attentive care.

The elaboration of this volume could have been very much facilitated, had simply a negative expression been chosen, whenever a difficulty arose in searching for a contrasting phrase in the dualism of the dichotomy, or had the characteristics of orders and of genera

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been so limited, as to apply merely to Victorian species, or had repetitions in the dichotomy not been entirely avoided. Then, as stated already, the difficulty presented itself, to maintain closely and uninterruptedly a systematic arrangement expressive of consecutive nearest affinities. Again, only such marks of separation could be seized on, as at a glance would be apparent even to the unarmed eyes, and as would not be liable to considerable inconstancy; thus then embryonic characteristics and any others, either much concealed or very minute, however important they might be, could not be drawn, unless exceptionally, into use for a work, which was to serve expeditious field-engagements mainly. Where in some few cases the author was compelled, to resort to the description of minute organs for discrimination, simply no other characteristics existed for separating the complex of some plants from that of some others; but even in the instance of seizing on the only mark of distinction, by which the Salsolaceae and allied orders can comprehensively be removed from some other ordinal groups, the mere crushing of a seed will suffice for recognising instantly, even without microscopic aid of any kind, the starchy contents of the seeds and the remarkable form of its embryo. With the same ease might almost the detail-floral structure of our numerous Acacias be noted as demonstrating differences of externally similar species; and on this particular subject information for home-studies might be sought in the "Iconography of Australian Acacias" recently issued.

The number of the species, admitted into this work, had they been treated in a less conservative sense, could have been largely augmented; but when we see, to cite an example, how in perhaps a thousand plants of Caladenia Patersoni, the most beautiful and also the most widely distributed of our terrestrial orchids, hardly two are quite alike as regards their flowers, while the majority of the individual plants are so sportive, that the species became described under several names by various writers, we should pause, ere we attempt to circumscribe supposed specific forms, and leave

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the discrimination of them for varieties or otherwise to more extended studies in the field here and also in other parts of Australia. The separating of varieties of any species were beyond the scope of the present pages. Literary quotations and synonymy are also excluded from this work. In any future impression some of the characteristics, adopted as specific, could likely with advantage be transferred to generic notes; so also some primary notes in the dichotomy may hereafter become subsidiary or affirmative and *vice versâ*.

It would be advisable, that whoever may use methodically this book, should provide a blank volume, correspondingly paged, for entries on soil, stature, measurements, regional elevation, odor, color, locality and copiousness or scarcity of any plant, with a view of subsequently "comparing notes," for instance on flowering time, phaenologic data, as aiding meterologic observations, having in late years become quite a science-branch in Phytology by itself. Be it remembered, however, that identical plants are flowering nearly three months later in our Alps than in the north-western lowlands; some practical application to this particular subject has been recently given in the seventh edition of the "select plants for industrial culture and naturalisation." Thus also what may be frequent in one locality may be rare in another. Which regions still need closer investigation for their floral treasures, and what number of additional species may still be expected as gatherable within our territory, has been noted in a late number of the "Field-Naturalist." Our knowledge requires also yet to be perfected in reference to the permanency of some of the characteristics, assigned to species of such genera of much complicated forms, as Rhagodia, Atriplex, Swainsona, Leptospermum, Pultenaea, Stackhousia, Opercularia, Epacris, Euphrasia, Prasophyllum, Pterostylis, Xerotes, Scirpus, Lepyrodia, Stipa, Danthonia, Agrostis, Lepidosperma, because here in a comparatively young colony the whole cyclus of forms, within which species range, particularly in climatic regions so extensively varied as ours, is not in all cases yet

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sufficiently ascertained; indeed the degree of variability, which should be assigned to plants truly specifically different, is not yet fully determined for all, even in the vegetation at some of the oldest seats of learning in the world. Several of the species, standing in need of critical re-elaboration, are restricted to remote regions of our territory, where these particular plants in their native haunts could not yet be traced through all their states, whether normal or aberrant.

Some few generic alterations in the descriptive volume were made, to fit the respective plants easier into the dichotomic arrangement, but only in cases where the generic position would seem optional; still in some instances the change was demanded by more recent researches on ampler material, and so it was in a few cases as regards specific names. Doubtless indeed the records of the characteristics could be augmented and occasionally improved from future researches; but at all events a solid basis is now gained, on which to enlarge or embellish hereafter the literary structure now offered. The descriptive details were kept more curt in the earlier portion of the work, than in the later; but in the "Native Plants of Victoria" rather full descriptions are given for all "hypogynous choripetaleae" before this, to which might be referred, and that work can now most easily be continued and completed, as the elaborated main notes and all necessary illustrations are now extant through the present publication. But, as much more important, may be remarked, that of nearly the whole of the 1,900 vascular plants, known as indigenous to Victoria, full descriptions are given long ago in the seven volumes of the Australian Flora, which emanated mainly from the genius, the assiduity and the life-long experience of the late George Bentham, aid being afforded by vast material and subsidiary notes from here; really we would have had no cause for special writings on the Flora of this colony as a whole, were it not desirable to have our own plants treated in a concise and inexpensive publication here locally. For delimitation of genera the celebrated work of Bentham and

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Hooker was always a safe guide, though the sequence as adopted by the authors of that great opus was not in all instances adhered to for the present volume.

The multifarious demand on the author's time did not allow, to check by autopsy all the diagnostic definitions now offered, as the close inspection of the whole vast botanic treasures, accumulated by him in Australia since 1847, demonstrative of manifold degrees of variability, would have retarded the appearance of this volume still further, than already has been the case, he being anxious to carry through the work not only conscientiously but also within a reasonable extent of time. Minor alterations and perhaps unimportant additions, can gradually be effected for supplemental pages or perhaps new editions. Indeed, some species of plants had to be laid aside, while the elaboration was progressing, to be dealt with in time-taking critical examination at an early future.

If methodically followed, the dichotomy should safely lead up to any of our numerous indigenous plants, the name of which is to be ascertained. But the tyro may find it in first instance most convenient, to consult the many xylographic illustrations, from which he ought to be able to recognise with the utmost ease many of the species, indigenous in the surrounding vegetation; he will have further the aid of the vernacular index, though this was kept purposely brief; he can then also refer to a large number of indications of very obvious outer marks, some of which will lead the young disciple at once to various kinds of plants, with which from striking external characteristics even the least observant child must be familiar already from mere memory. The grouped miscellaneous characteristics just referred to were suggested by principles, first used in the volume on "Select Plants for Industrial Culture and Naturalisation (1872)," with a view of grouping generically together the utilitarian plants of the globe according to their various qualities and applications. On the groups of genera, thus formed, arbitrary arrangements for any key different to this might be founded, should such be preferred by any worker on our

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native plants to a truly systematic placement; but then endless difficulties would have to be encountered in dealing with the large remainder of the plants, after the characteristics of these miscellaneous and unsystematic groups had been exhausted.

It was not deemed advisable, to burden this volume with descriptive definitions of immigrated plants, as the book exceeds already the space originally assigned to it; but the majority of the plants hitherto naturalized are of wide distribution in Europe, and therefore descriptions of them are contained in any of the works on the British flora, and these are readily accessible also here. A list however of the non-Australian plants, permanently established on Victorian soil already, is given towards the end of this volume; but with an admission only of those of their popular names, which are neither ambiguous nor unmeaning. A vocabulary of botanic expressions was also considered unnecessary for these pages, because what little of wording was adopted from the ancien languages for our present plain literary purpose became explained simultaneously with the expositions of the analytic details of the numerous woodcut-illustrations. Definite measurements of plants or their organs have not been regarded as needful for descriptions necessary to be brief; dimensions always range within wide or uncertain limits, comparative data being quite sufficient for what concerns us here at present. All the measurements of the xylographic main-delineations are purposely kept to natural size, diminuation of figures of plants being always objectionable as not conveying a fair idea of their subject. Whenever any plants are indicated as alpine, as maritime or as otherwise restricted, it is to be understood, that they are thus far exclusively localized; yet it is to be remembered, that about one hundred species of our phanerogamous lowland-plants ascend the Australian Alps, and that a still larger number of our various inland-plants approach the shores of our southern ocean.

A few typographical and scriptorial errors eluded timely observation; but they seem so insignificant, that it was not deemed

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worth while to effect the formal corrections already in the present issue of the work; in a future one some discrepancies, as regards the wordings used for the first and for the second part of this edition, can also be reconciled. Abbreviations have been avoided throughout the text. Their use involves mental extra-exertions, is confusing particularly to tyros and perhaps even deterring to them, while all that possibly could be derived from a procedure of shortening words or by employing symbolic renderings, would be, to save a few pages printing in any popular small work of the kind here under consideration.

Although for an official publication like this rights cannot be reserved, yet it is hoped, in the interest of the Public Department, from which it emanated, that its originalities will be duly respected. The permission for extensively transcribing (even under some modifications) from these pages can only be conceded on terms of fullest literary acknowledgment. But it may at once here be mentioned, that when the results of this season's Victorian work in botanizing shall have been attained, an extra-print of the dichotomic notes will be furnished, into which the various new acquisitions to the records of the Victorian flora can then also be embodied. Indeed, for local publications to find out the names of plants, occurring at any town or in any district of Victoria, the sole reconstruction of the dichotomic notes would likely suffice, unless subsidiary notes, though still more brief, were added also—inasmuch as the present main-work would be readily at hand—so that the respective "Florules" could be brought out easily and inexpensively after fairly extensive botanic searches through any of the delimited floral areas have been instituted.

It remains for the author gratefully to acknowledge that Mr. G. Luehmann, Senior Assistant in the Phytologic Department of Melbourne, has aided extensively in setting out the dichotomic phrases, after their elaboration and graduation had been completed, and that he as well as Mr. Ch. French, junior, an office-assistant, gave much help in carrying out the clerical portion of

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the engagements for producing this volume. In concluding these prefatory remarks the writer may still point out, that plants are more readily accessible, more easily prepared and more commodiously kept, than any other naturalist's collections. Any such gatherings, however small at the commencement, may therefore become permanent; they may add to the objects for mental training and joyous engagements far beyond what by the youthful observer could be surmised playfully at the outset; they may exercise indeed an influence on a whole life, and they suredly should always lead up to contemplations of the godly power, from which the endless and marvellous forms of nature derive their origin, their design and their maintenance.

Melbourne, October, 1888.

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KEY TO THE SYSTEM OF VICTORIAN PLANTS.

MAIN DIVISIONS OF PLANTS.

Plants provided with floral organs.

Leaves mostly developed; plants bearing stamens, pistils and, in advancing age, embryonate seeds. Figures 1–126.

Dicotyledoneae and **Monocotyledoneae.** 1

Plants unprovided with floral organs.

Leaflike organs rarely provided, replaced by frondal expansions; plants bearing antheridia and archegonia in earliest age on a minute prothallus, and bearing caselets (sporangia) with very minute spores (substitutes for seeds) mostly on fronds. Figures 127–152.

Acotyledoneae vasculares. 105

1. **Venules of leaves mostly divergent.**

Calyx and corolla often divided into four and still oftener into five parts or the corolla absent. Figures 1–111.

Dicotyledoneae. 2

Venules of leaves mostly parallel-longitudinal.

Calyx and corolla often divided into three parts, or less frequently both rudimentary or absent. Figures 112–126.

Monocotyledoneae. 89

2. **Stigma present, ovulary closed.** Figures 1–110.

Angiospermae. 3

Stigma absent, ovulary open. Figure 111.

Gymnospermae. 88

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3. **Petals usually disunited, not rarely absent.** (Exceptions for Victoria: some Pittosporeæ, all Polygaleæ, Correa, Stackhousia, Statice partly, most Leguminosæ.) Figures 1–63. **Choripetaleae.** 4

Petals usually united, very rarely absent. (Exception: Notelaea). Figures 64–110. **Synpetaleae.** 57

4. **Stamens often inserted at the base of or below the ovulary; fruit nearly aways adnate only at its base.** (Exceptions: Eupomatia, Cassytha, Fagus, Boerhaavia, Scleranthus, some Ficoideae). Figures 1–44. **Choripetaleae hypogynae.** 5

Stamens often inserted away from the base of the ovulary; fruit generally adnate to the sides of the calyx. (Exceptions: Leguminosae, many Rosaceae and Saxifrageae, all Salicarieae and Viniferae, Exocarpos). Figures 45–63. **Choripetaleae perigynae.** 46

ORDERS OF PLANTS.

DICOTYLEDONEAE.

Choripetaleae hypogynae.

5. **Fruit generally formed of separate fruitlets, each of them with a distinct style and stigma.** (Also Brachychiton.) Figures 1–6 6

Fruit entire, lobed or finally separable into fruitlets; styles usually united or solitary. Figures 7–44 ... 13

6. **Stamens indefinite in number** 7

Stamens definite in number 12

7. **Calyx generally deciduous** 8

Calyx generally persistent 9

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8. Sepals mostly five or less frequently four.
Seeds without any appendage; albument (albumen, albumentum) of seed carnulent or horny, unbroken. Figure 1.
Ranunculaceae. 108

Sepals mostly three; petals generally ternarily whorled.
Ovules generally more than one; stipules usually present. Figure 3.
Magnoliaceae. 111

9. Albument of seed starchy.
Always aquatic plants; seeds attached to the walls of the fruit-cavity; embryo minute, lodged in a separate hollow of the seed.
Nymphaeaceae. 112

Albument of seed almost carnulent 10

10. Albument of seed broken.
Sepals early contiguous at the margins or forming a lid; arrangement of sepals and petals often ternary.
Anonaceae. 113

Albument of seed unbroken 11

11. Calyx generally consisting of distinct sepals.
Seeds attached to the base or to the inner angle of the fruit-cavity, generally surrounded by an appendage (arillus). Figure 2.
Dilleniaceae. 114

Calyx generally lobed.
Petals always absent; fruitlets usually numerous. Figure 4.
Monimieae. 115

12. Calyx consisting of distinct sepals.
Always climbers; sepals and petals generally in whorls of three; fruitlets three or more; ovule one. Figure 6.
Menispermeae. 116

Calyx lobed.
Petals always absent; anthers opening by valves; fruitlet always solitary, often enclosed; ovule nearly always one. Figure 5.
Lauraceae. 117

13. Albument of the seed carnulent or horny or none ... 14

Albument of the seed starchy 37

14. Stamens and pistils usually in the same flowers. (Exception: Dodonaea partly) 15

Stamens and pistils usually in distinct flowers 34

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15. Sepals or lobes of the calyx overlapping before expansion **16**

Sepals or lobes of the calyx contiguous at the margin before expansion **31**

16. Seeds fixed to the walls of the fruit-cavity **17**

Seeds, when more than one, fixed away from the walls of the fruit-cavity **21**

17. Sepals often two.

Sepals fugacious; petals generally four, usually almost equal; embryo minute, at the base of the albument. **Papaveraceae.** **118**

Sepals often four or five **18**

18. Sepals generally four **19**

Sepals generally five **20**

19. Stamens usually six, two of them shorter.

Sepals always four; petals generally four, usually almost equal; fruit often deciduously bivalved and longitudinally two-celled; albument none. Figure 8. **Cruciferae.** **119**

Stamens usually indefinite in number.

Sepals often four; petals generally four, usually almost equal; fruit one-celled; albument none. Figure 7. **Capparideae.** **131**

20. Petals equal.

Herbs beset with glandular-hairlets; leaves and flower-stalks coiled before expansion; sepals, petals and stamens often five; petals persistent, extremely tender; fruit dehiscent, often one-celled. Figure 11. **Droseraceae.** **132**

Petals usually very unequal.

Sepals, petals and stamens five; filaments flat, extending beyond the anthers; fruit one-celled. Figure 9. **Violaceae.** **133**

21. Fruit lobeless **22**

Fruit often lobed or finally separable into fruitlets ... **25**

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22. Sepals often very unequal.

Sepals partly petaloid; petals generally connected with the staminal tube; stamens mostly eight, filaments connate; anthers one-celled, each opening by a pore. Figure 13.
Polygaleae. 135

Sepals almost or quite equal 23

23. Stamens indefinite in number.

Stipules absent; leaves generally opposite, often dotted; sepals, petals and styles usually five; petals twisted before expansion; filaments often connate; styles disconnected; fruit bursting along the dissepiments.
Hypericinae. 136

Stamens definite in number 24

24. Styles more than one, disconnected.

Stipules present; sepals, petals and styles usually three to five; petals flat before expansion; filaments always disconnected; seeds fixed to the inner angles of the fruit. Figure 12.
Elatineae. 137

Style one.

Sepals, petals and stamens mostly five; petals often coherent; filaments often disconnected; ovulary one- to five-celled; embryo minute. Figure 10.
Pittosporeae. 138

25. Leaves always pellucidly dotted.

Petals four to five, sometimes coherent; styles united; fruitlets coherent, often bivalved, the husk mostly separating in two layers. Figures 14 and 15.
Rutaceae. 142

Leaves generally without pellucid dots 26

26. Stamens usually five 27

Stamens usually eight to ten 29

27. Seeds often clasped by a bright-colored arillar appendage.

Stipules usually absent; leaves always simple; flowers mostly symmetrical; stamens inserted on a disk; fruit mostly dehiscent; embryo straight. Figure 28.
Celastrinae. 147

Seeds without any clasping appendage 28

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28. Petals always disconnected.

Stipules often absent or rudimentary; sepals and petals five, seldom four; filaments often united at the base and there gland-bearing; fruit lobeless, but usually dehiscent along the dissepiment, with often subdivided partitions.
Lineae. 148

Petals nearly always connected.

Stipules absent or rudimentary; petals five, often much cohering; fruit consisting of three to five indehiscent fruitlets; fruit-axis persistent. Figure 29.
Stackhousieae. 149

29. Stipules often absent.

Leaves simple or oftener pinnate; flowers often unsymmetrical; stamens mostly inserted between the ovulary and the disk; fruit mostly dehiscent; embryo generally curved. Figure 27. **Sapindaceae.** 150

Stipules often present 30

30. Stamens usually disconnected.

Petals four to five; styles generally united; fruit consisting of free or coherent fruitlets, rarely consolidated and hard inside (a drupe.) Figures 16 and 17. **Zygophylleae.** 152

Stamens usually connected.

Petals generally five; fruit consolidated or consisting of three to five free or connected fruitlets; fruit-axis persistent. Figure 18. **Geraniaceae.**

31. Anthers one-celled. 154

Petals united at the base with the tube of the stamens; stamens usually indefinite in number; anthers bivalved; fruit consolidated or consisting of coherent or seceding fruitlets, whorled around a central columnar axis; seeds fixed to the axils of the fruit. Figure 19.
Malvaceae. 157

Anthers two-celled 32

32. Fruit always two-celled.

Petals four to five; stamens eight to ten, disconnected; anthers opening each by a terminal pore; fruit entire; seeds pendent. **Tremandreae.** 162

Fruit generally three- to five-celled or consisting of distinct fruitlets 33

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33. Petals rarely absent.

Petals four to five; stamens numerous, generally disconnected; seeds mostly pendent, fixed to the axils of the fruit. Figure 22. **Tiliaceae.** 163

Petals usually absent.

Petals five, when present; stamens disconnected or united; seeds mostly ascendent, fixed to the axils of the fruit. Figures 20 and 21. **Sterculiaceae.** 164

34. Ovulary nearly always with more than one cell ... 35

Ovulary with one cell only 36

35. Fruit only with its base fixed to the calyx.

Fruit-cells frequently opening by bivalvular dehiscence; seeds fixed to the inner angles of the fruit; albument often large. Figure 23. **Euphorbiaceae.** 167

Fruit, when provided with a calyx, adnate to it.

Fruit involucrated; indehiscent; seed one; albument none. **Cupuliferae.** 178

36. Leaves very conspicuous, mostly scattered.

Fruits indehiscent, dispersed or crowded or connate into a succulent mass; seed one, often with scanty or without albument. Figure 24. **Urticaceae.** 179

Leaves rudimentary, whorled.

Fruits seed-like, their enlarged and hardened bracts and bracteoles connate into an almost strobilaceous mass; leaves cylindrically connate; fruits terminated by a membranous appendage, the whole fruiting mass resembling small pine-cones (strobiles); seeds without albument. Figure 25. **Casuarineae.** 182

37. Albument usually inside the curvature of the embryo ... 38

Albument quite outside the embryo 45

38. Fruit consisting of a single or of two or more separate or connate fruitlets, or the fruit two- or more-celled ... 39

Fruit one-celled 40

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39. Fruit consisting of a single or two or more separate or coherent fruitlets.

Leaves scattered, lobeless; calyx divided into sepals or lobes; petals generally none; fruitlets often circularly arranged; ovule usually single in each ovulary-cell; seed fixed to the base of the cavity; embryo imperfectly annular. Figure 43. **Phytolaccaceae.** 183

Fruit two- or more-celled.

Calyx divided into sepals or lobes; stamens mostly indefinite in number; seeds fixed to the base of the fruit-cavity or to the angles of the fruit-cells; embryo imperfectly annular. Figures 39, 40, 41. **Ficoideae.** 184

40. Petals usually present 41

Petals always absent 42

41. Sepals or calyx-lobes as many as petals.

Leaves always opposite; calyx of some genera tubular; stamens definite in number; fruit adnate only at the base; seeds two or more, fixed to the base of the fruit-cavity; embryo nearly always imperfectly annular. Figures 32 and 33. **Caryophylleae.** 186

Sepals or calyx-lobes fewer than petals.

Leaves mostly scattered; stamens often indefinite in number; fruit of some genera adnate in its lower portion; seeds numerous, fixed to the base of the fruit-cavity; embryo imperfectly annular. Figure 31. **Portulaceae.** 192

42. Fruit often adherent to the tube of the calyx.

Leaves mostly opposite and lobeless; style one; stigma undivided; fruit indehiscent; seed one, fixed to the base of the fruit-cavity; cotyledons usually broad, folded or convolute, including the albument. Figure 44. **Nyctagineae.** 194

Fruit often adnate only at the base 43

43. Stipules conspicuous, often tubular-connate.

Sepals or lobes of the calyx usually in two rows and often petaloid, membranous or succulent; stigmas two or three; fruit usually enclosed within the calyx, one-seeded, indehiscent; seed fixed to the base of the fruit-cavity; embryo lateral or axillary. Figure 42. **Polygoneae.** 195

Stipules none 44

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44. Calyx dry, often shining or whitish or bright-colored.

Calyx divided into sepals or lobed; stamens five or fewer; stigmas one to three; fruit usually enclosed within the calyx, mostly with one seed, irregularly dehiscent or circumcised; seeds fixed to the base of the fruit-cavity. Figures 34 and 35. **Amarantaceae.** 197

Calyx membranous or somewhat succulent, without any lustre, usually greenish.

Leaves usually scattered, often succulent; calyx often deeply lobed; stamens five or fewer; stigmas two or three; fruit usually enclosed within the calyx, never regularly dehiscent; seed one, fixed to the base of the fruit-cavity; embryo annular or coiled. Figures 36, 37, 38. **Salsolaceae.** 200

45. Seeds several or many, fixed to the walls of the fruit-cavity.

Leaves opposite, whorled or fascicled; calyx always tubular; stamens generally few; petals provided with an appendage; embryo straight. **Frankeniaceae.** 210

Seed one, fixed to the base of the fruit-cavity.

Leaves scattered or at the stem-base crowded; calyx constantly tubular; stamens always five, opposite to the petals; embryo straight. Figure 30. **Plumbagineae.** 211

Choripetaleae perigynae.

46. Fruit usually one-celled, representing a solitary fruitlet 47

Fruit usually with more than one cell or consisting of coherent or separate fruitlets. (Exceptions: Thryptomene, Actinotus) 48

47. Petals present.

Stipules often developed; leaves simple or pinnate or reduced to dilated leafstalks; fruit oblique, usually bivalved (Pod, Legume), simple though sometimes spuriously transverse-septate, very seldom forming from two to fifteen distinct fruitlets, always free from the calyx, with a solitary almost lateral style and simple stigma; seeds generally more than one, nearly always without albument. Figures 45 to 51. **Leguminosae.** 212

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Petals absent.

Stipules none; leaves always simple and quite entire; calyx corollaceous, its lobes overlapping before expansion; stamens definite, two or more, inserted on the calyx-tube; style one, often almost lateral; stigma one; fruit usually simple, indehiscent, only adnate at the base, but enclosed; seed solitary, pendent. Figure 74. **Thymeleae.** 241

48. Fruit often consisting of separate fruitlets, each with an almost lateral style 49

Fruit consolidated or consisting of connate or coherent fruitlets 50

49. Stamens mostly indefinite in number.

Stipules usually present; leaves either simple or compound, often indented or denticulated, of thin texture and without pellucid dots; leafstalks not rarely dilated; lobes of the calyx overlapping before expansion; petals sometimes absent; styles usually more than one, disconnected; ovules generally two in each cell; albument mostly absent. Figure 52. **Rosaceae.** 242

Stamens mostly definite in number.

Petals sometimes absent; stamens usually twice as many as petals or calyx-lobes; fruit usually compound, forming mostly distinct or coherent fruitlets, often only at or towards the base adnate; seeds generally several or many; albument mostly present. (Including Crassulaceae). Figures 53 and 54. **Saxifrageae.** 247

50. Stamens usually indefinite in number.

Woody plants from dwarf to tall; leaves transparently dotted, always entire, often of firm texture; stipules absent; lobes of the calyx overlapping or open before expansion or forming a lid; petals often five, not rarely absent; style one; stigma undivided; fruit high-adnate to the calyx; seeds without albument. Figures 56 to 60. **Myrtaceae.** 249

Stamens usually definite in number 51

51. Style nearly always one 52

Style nearly always more than one 55

52. Stamens twice as many as petals or calyx-lobes ... 53

Stamens as many as petals or calyx-lobes 54

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53. Fruit adnate to the calyx at the base only.

Stipules absent; leaves without dots; lobes of the calyx contiguous at the margin before expansion; seeds generally numerous. **Salicarieae.** 262

Fruit high-adnate to the calyx.

Usually herbaceous plants; stipules absent; leaves without dots; lobes of the calyx contiguous at the margin before expansion; petals often four; ovulary often four-celled; seeds generally numerous. **Onagreae.** 263

54. Calyx conspicuously lobed.

Woody plants, seldom climbers, very rarely producing tendrils; leaves always simple; lobes of the calyx contiguous at the margin before expansion; petals minute, very concave, not rarely absent; stamens usually five, inserted on the calyx-tube and alternating with the lobes or denticles of the calyx; stigmas usually three; ovulary generally three-celled; fruit adnate to the calyx beyond the base. Figure 61. **Rhamnaceae.** 264

Calyx lobeless.

Mostly climbers, very often producing tendrils; leaves either simple or compound; petals always small, contiguous at the margin before expansion; stamens all alternating with the lobes or denticles of the calyx; stigma one; fruit adnate to the unenlarging calyx towards the base only, at last placed superiorily. Figure 26. **Viniferae.** 266

55. Stamens usually twice as many as petals or calyx-lobes.

Herbs, seldom somewhat woody plants, with mostly small flowers; stipules absent; fruit-cells or fruitlets one to four, with separate styles and stigmas; seeds always solitary and pendent, with albument. Figure 55. **Haloragese.** 267

Stamens usually as many as calyx-lobes 56

56. Petals contiguous before expansion.

Generally woody plants, often with compound leaves; stamens all opposed to the lobes or denticles of the calyx, inserted on a terminal (epigynous) disk; fruit fully adnate to the calyx, consisting of two or more connate fruitlets; albument sometimes lobed or broken. Figure 62. **Araliaceae.** 271

Petals generally overlapping before expansion.

Herbs, often with dissected leaves; stamens all opposed to the lobes or denticles of the calyx, inserted on a terminal disk; styles and stigmas always two; fruit fully adnate to the calyx, consisting of two connate fruitlets, often provided with longitudinal oilducts. (Exception: Actinotus). Figure 63. **Umbelliferae.** 272

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57. Stamens often inserted away from the base of the ovulary; calyx high-adnate to the fruit or rudimentary or absent. (Exception: Velleya). Figures 64 to 95. **Synpetaleae perigynae.** 58

Stamens often inserted at the base of or below the ovulary; calyx beyond its base free from the fruit. (Exception: Wittsteinia). Figures 96 to 110. **Synpetaleae hypogynae.** 68

Synpetaleae perigynae.

58. Nearly always climbers or twiners 59

Very seldom climbers or twiners 60

59. Perfect stamens and pistils in separate flowers.

Plants seldom woody; tendrils often developed; leaves scattered, often lobed; stipules absent; corolla-base confluent with the calyx; stamens often five, but connate into three; fruit carnulent, generally one-celled, with placentaries affixed to the walls of the fruit-cavity, without complete dissepiments; seeds without albument. Figure 77. **Cucurbitaceae.** 286

Perfect stamens and pistils mostly in the same flowers.

Plants not seldom woody; tendrils often developed; leaves scattered, generally lobed; flowers provided with a fringy floral whorl (corona), irrespective of the corolla; stamens generally three to five; fruit free, without any complete dissepiments, and with placentaries affixed to the walls of the fruit-cavity; seeds with albument. **Passifloreae.** 287

60. Epiphytal parasites.

Parasites generally on branches of trees, rarely terrestrial, one species a tall tree; leaves usually opposite; calyx adnate, its lobes obliterated or seldom well developed; lobes of the corolla few, contiguous at the margin before expansion; stamens opposite to the corolla-lobes; style one; stigma undivided; ovulary one-celled; ovule generally one, attached to the wall of the ovulary without the intervention of a distinct placentary, sessile; fruit without any dissepiment, never dehiscent; seed unprotected by integumental membranes. Figure 66. **Loranthaceae.** 288

Terrestrial plants 61

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61. Calyx undeveloped.

Woody, rarely almost herbaceous plants, some species tall trees; calyx absent or rudimentary; petals always four, connate, sometimes partly seceding from each other, contiguous at the margin before expansion; stamens always four, opposite to the corolla-lobes; style one; stigma undivided; ovulary one-celled with one or more not rarely numerous ovules; fruits free from each other or strobilaceous-connate, often dehiscent and somewhat oblique, without real dissepiment, and thus representing solitary fruitlets; albument always absent; seeds one or more, provided with outer membranes, but the embryo not rarely seceding therefrom. Figures 67 to 73. **Proteaceae.** 289

Calyx developed 62

62. Corolla continuous with the calyx-tube.

Herbaceous or woody plants, some species trees but then seldom tall, sometimes parasites on roots; lobes of the corolla contiguous at the margin before expansion; stamens four or five, opposite to the corolla-lobes; ovulary one-celled; ovules one to five, pendent from a distinct central placentary; fruit never dehiscent, without any dissepiment; seed solitary, unprotected by integumental membranes (testa and endopleura); albument always present. Figures 64 and 65. **Santalaceae.** 298

Corolla discontinuous with the calyx-tube 63

63. Leaves constantly opposite 64

Leaves mostly scattered or partly tufted. (Exceptions: Siegesbeckia, Eclipta) 65

64. Stipules present.

Herbs, shrubs or trees; leaves never compound, rarely denticulated, never lobed, unless rarely by a basal sinus; stipules between the bases of the leafstalks often connate; flowers almost always symmetrical; stamens disconnected, generally as many as corolla-lobes and alternating with them; ovulary with two or more cells, rarely with only one cell; fruit usually with one or more longitudinal dissepiments. Figure 75. **Rubiaceae.** 303

Stipules absent.

Herbaceous or oftener woody plants, some arborescent or climbing; leaves simple or not rarely compound; flowers symmetrical or unsymmetrical; lobes of the corolla three

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to five, overlapping before expansion; stamens disconnected, generally as many as calyx-lobes and alternating with them; ovulary with two or more cells, rarely one-celled; fruit usually with one or more longitudinal dissepiments. Figure 76. **Caprifoliaceae.** 308

65. Flowers within an involucre of bracts.

Herbs or shrubs, seldom trees; sap usually limpid, but sometimes also milky; stipules absent; lobes of the calyx contiguous at the margin before expansion; limb of the calyx consisting of hairlets or plumous or scaly or spinulous organs (pappus) or quite absent; anthers generally connate around the style; ovulary one-celled; ovule one, erect; fruit seed-like (achænium), enclosed in the calyx-tube; seed without albument. Figures 78 to 90.
Compositae. 309

Flowers unprovided with an involucre of bracts. (Exception: Brunonia) 66

66. Lobes of the corolla overlapping before expansion.

Herbs, rarely somewhat woody plants, very seldom climbers; sap limpid; stipules usually absent; leaves scattered or tufted or sometimes whorled; fifth lobe of the corolla often diminutive; stamens two, connate with the style, the whole mostly irritable into spontaneous movement; fruit with a longitudinal dissepiment. (Stylideae.) Figures 92 and 93. **Candolleaceae.** 364

Lobes of the corolla contiguous at the margin before expansion 67

67. Stigma unenclosed in any special covering.

Shrubs or oftener herbs; sap usually milky, often acrid; stipules absent; anthers often connate around the style; fruit generally two- or more-celled; seeds numerous, seldom few. Figure 91. **Campanulaceae.** 365

Stigma enclosed in a special mostly ciliolated covering.

Herbs or shrubs; sap limpid, often bitter; stipules absent; leaves usually scattered or tufted; corolla-lobes five, nearly of the same length, but usually unequal in breadth, often provided with marginal membranes and these at first folded inwards; stamens five; filaments disconnected; anthers seldom connate around the style. Figures 94 and 95. **Goodeniaceae.** 367

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Synpetaleae hypogynae.

68. Corolla equally lobed **69**

Corolla unequally lobed. (Exceptions: Avicennia, Verbena, Myoporum) **81**

69. Fruit almost or quite lobeless. (Exception: Jasminum) ... **70**

Fruit conspicuously four-lobed or consisting of four almost distinct fruitlets **79**

70. Placentaries usually two, fixed to the walls of the fruit-cavity.

Herbs, seldom woody plants; sap very bitter; leaves opposite or less often basal, quite entire or with a basal sinus, or very seldom divided into segments; stipules absent; stamens usually four or five; fruit often one-celled, bursting marginally along its suturules and often near the placentaries. Figure 96. **Gentianeae.** 372

Placentaries fixed either to the dissepiment or to the inner angle of the fruit-cells or to the base of the fruit-cavity **71**

71. Placentaries two, fixed to the dissepiment **72**

Placentary one, fixed to the base of the fruit-cavity, or placentaries fixed to the inner angle of the fruit-cells **75**

72. Stamens almost constantly two.

Trees or erect or climbing shrubs; leaves nearly always opposite, simple or compound; corolla with four or more lobes, sometimes partially seceding into petals, very seldom absent; fruit two-celled and of some species bilobed, bursting contrary to the dissepiment or indehiscent; seeds few or two or one; embryo straight. Figure 100. **Jasmineae.** 375

Stamens usually four or five **73**

73. Leaves almost constantly opposite.

Herbs or shrubs or small trees; stipules rudimentary or absent; leaves rarely whorled, never lobed and never compound; fruit often two-celled, bursting along the dissepiment or indehiscent; embryo straight. Figure 97. **Loganiaceae.** 376

Leaves usually basal or scattered **74**

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74. Lobes of the corolla almost constantly four, overlapping before expansion.

Herbs, rarely somewhat woody plants; flowers minute, usually in spikes; calyx consisting of sepals; corolla dry, almost transparent; stigma generally elongated, undivided; fruit very small, mostly opening by transverse dehiscence; embryo usually straight. Figure 98.
Plantagineae. 377

Lobes of the corolla almost constantly five and before expansion contiguous, their marginal membrane then folded inward.

Herbs or shrubs, rarely small trees; leaves scattered or sometimes two laterally placed together; flowers often rather large; stamens usually five, rarely unequal; fruit often two-celled; seeds usually indefinite in number; embryo simply curved or coiled, generally filiform. Figure 103. **Solanaceae.** 378

75. Placentary one, fixed to the base of the fruit-cavity ... 76

Placentaries two or more, fixed high or low to the inner angle of the fruit-cells 77

76. Fruit dehiscent, generally many-seeded.

Herbs, seldom somewhat woody plants; leaves usually scattered or basal or whorled or crowded, in some species dotted as well as the inflorescence; stamens opposite to the lobes of the corolla; stigma constantly undivided; fruit always one-celled. **Primulaceae.** 381

Fruit indehiscent, generally one-seeded.

Trees or shrubs; leaves nearly always scattered and pervaded by pellucid dots or streaklets; stamens opposite to the lobes of the corolla, not rarely in flowers distinct from those bearing pistils; stigma undivided; fruit constantly one-celled. Figure 99. **Myrsinaceae.** 383

77. Anthers one-celled.

Weak or robust shrubs, rarely trees and then not very tall; leaves stiff, harsh, nearly always scattered; stamens usually five, often adnate to the corolla; anthers never dorsally appendiculated; stigma undivided; fruit-cells usually more than one; placentaries fixed often high to the inner angle of the fruit-cell. Figure 110.
Epacrideae. 384

Anthers two-celled 78

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78. Stamens usually eight or ten.

Weak or robust shrubs, not often trees and then not very tall; leaves generally scattered or whorled; stamens often free from the corolla; anthers frequently dorsally appendiculated; fruit-cells more than one; placentaries fixed to the inner angles of the fruit-cells; seeds usually numerous; embryo straight. (Exception: Wittsteinia.) Figure 109.
Ericaceae. 389

Stamens almost constantly five.

Usually climbers or twiners or creepers; leaves mostly scattered; corolla generally much folded; fruit-cells two or more; placentaries fixed to the fruit-angles at the base of the cavity; seeds definite in number, erect; embryo usually twisted or folded. **Convolvulaceae.** 390

79. Pollen defined into two or four massules.

Leaves nearly always opposite; anthers connate; pollen-massules affixed to five distinct processes; stigma undivided, dilated; fruit normally consisting of two distinct elongated and one-celled fruitlets, one fruitlet sometimes undeveloped; seeds nearly always terminated by a tuft of soft hairlets. Figure 102. **Asclepiadeae.** 394

Pollen undefined in form, powdery 80

80. Fruit usually consisting of two distinct fruitlets.

Leaves generally opposite; anthers connivent; stigma annular-dilated; fruit sometimes solitary, seldom two-celled, or occasionally one of the two fruitlets undeveloped. Figure 101. **Apocyneae.** 397

Fruit usually four-lobed from the concrescence of as many fruitlets as lobes.

Herbs or less often shrubs, rarely tall trees; leaves frequently scattered, some not rarely basal, often as well as the branchlets and inflorescence beset with stiff hairlets; fruitlets generally small and dry; seeds pendent. Figure 106. **Asperifoliae.** 398

81. Fruit usually four-lobed.

Herbs or shrubs, rarely trees small or exceptionally of tallness; leaves constantly opposite; lobes of the corolla in two unequal sets; stamens two or four and then the two lower the longest; style one; stigmas nearly always two; seeds erect, solitary in each fruitlet. Figure 107.
Labiatae. 405

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Fruit lobeless **82**

82. Parasites on roots of other plants; leaves always undeveloped.

Herbaceous plants, seldom branched, never green; lobes of the corolla in two unequal sets; stamens four, the two lower the longest; ovulary one-celled; placentaries two to four, attached to the walls of the fruit-cavity; seeds numerous and minute. **Orobancheae.** 414

Terrestrial or much less frequently semiaquatic or epiphytal plants; leaves always developed **83**

83. Leaves often radical or floating; minute vesicular pitchers (ascidia) frequently at or near the leaves.

Always herbs, seldom tall; lobes of the corolla in two unequal sets; stamens two only; style obliterated; stigmas two; ovulary one-celled; placentary one, attached to the base of the fruit-cavity; seeds numerous and minute. Figure 105. **Lentibularinae.** 415

Plants hardly ever floating, unprovided with pitchers **84**

84. Fruit many-seeded **85**

Fruit two- or few-seeded **87**

85. Fruit usually one-celled.

Herbs, not rarely epiphytal, or shrubs, seldom small trees; lobes of the corolla in two unequal sets; leaves opposite, but not rarely one smaller, or some of them basal; stamens usually four, two imperfect; anthers often somewhat coherent; ovulary one-celled or imperfectly two-celled; placentaries two, attached to the walls of the fruit-cavity; seeds always minute. **Gesneriaceae.** 416

Fruit usually two-celled **86**

86. Seeds small or minute.

Herbs or shrubs, rarely small trees; leaves opposite, less frequently scattered or partially basal; lobes of the corolla in two unequal sets; stamens two or four and then the two lower the longest; ovulary completely two-celled; placentaries generally attached to the dissepiment; seeds several or oftener numerous. Figure 104.

Scrophularinae. 417

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Seeds comparatively large, flat and surrounded by a broadish membrane.

Usually woody climbers, sometimes trees even of tallness; leaves generally opposite and frequently divided into leaflets; lobes of the corolla in two unequal sets; stamens four, the two lower the longest; anther-cells disconnected except at the summit; stigma constantly bilobed; ovulary two-celled, with two placentaries attached to each side of the deciduous dissepiment, or one-celled with two double placentaries attached to the walls of the fruit-cavity. **Bignoniaceae.** 424

87. **Seeds erect.**

Herbs, shrubs or trees; leaves nearly always opposite, hardly ever compound; lobes of the corolla almost equal or oftener in two unequal sets; stamens two or four; anther-cells mostly distinct, almost parallel, hardly continuous at the summit; stigma usually bilobed; fruit two- to four-celled; seeds solitary in each fruit-cell. **Verbenaceae.** 425

Seeds pendent.

Shrubs or not often small trees, seldom semiherbaceous plants; leaves nearly always scattered, often dotted; lobes of the corolla almost equal or in two unequal sets; stamens four, rarely five; anther-cells soon divergent, by terminal continuation of their dehiscence rendering the anther almost one-celled; stigma undivided; fruit hard or sometimes outside succulent, two- or four-celled or seldom five- to ten-celled; seeds one to four in each fruit-cell. Figure 108. **Myoporinae.** 427

Apetaleae gymnospermae.

88. **Ovulary open.**

Shrubs or trees, mostly evergreen, often resinous; leaves scale-like or acicular- or angular-linear, much less frequently dilated and flat; stamens and pistils never united; anthers two or more, placed on dilated scale-like rhacheoles, one-celled, simply dehiscent; filaments absent; fruit-bearing rhacheoles crowded into strobiles (cones) or forming berry-like masses or scattered; fruits seed-like; albument present; cotyledons two or more; medullary rays exceedingly faint; woody tissue almost uniform-prosenchymatous. Figure 111. **Coniferae.** 428

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MONOCOTYLEDONEAE.

89. **Flowers provided with a conspicuous calyx** 90

Flowers unprovided with a conspicuous calyx. Figures 125 and 126. **Acalyceae hypogynae.** 104

90. **Stamens often inserted away from the base of the ovulary; calyx high-adnate to the fruit.** Figures 112 to 116. **Calyceae perigynae.** 91

Stamens often inserted at the base of or below the ovulary; calyx beyond its base free from the fruit. Figures 117 to 124. **Calyceae hypogynae.** 94

Calyceae perigynae.

91. **Lower petal usually much unlike the two other.** (Exception here: Thelymitra.)

Terrestrial or epiphytal plants; flowers often exquisitely showy; calyx-lobes three, often petal-like; stamen and style connate (gynostemium); anther almost constantly one; fruit always longitudinally dehiscent; placentaries attached to the wall of the fruit-cavity; seeds mostly very minute. Figures 112 and 113. **Orchideae.** 429

All three petals usually alike 92

92. **Stamens and pistils mostly in separate flowers.**

Aquatic herbs; petals often very tender and fugacious; fruit indehiscent; placentaries attached to the walls of the fruit-cavity; seeds without albument. Figure 115. **Hydrocharideae.** 450

Stamens and pistils usually in the same flowers ... 93

93. **Calyx-lobes petal-like, often very tender and fugacious.**

Nearly always land-plants; flowers often large and showy; petals usually three, mostly equal; stamens generally three, always opposite to the calyx-lobes; anthers bursting on the outer side; fruit longitudinally dehiscent; placentaries nearly always attached to the inner angles of the fruit-cavity; seeds with albument. Figure 114. **Irideae.** 453

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Calyx-lobes petal-like, often firm.

Nearly always land-plants; flowers often large and showy; petals three, equal; stamens generally six; anthers bursting on the inner side; fruit longitudinally dehiscent or indehiscent; placentaries nearly always attached to the inner angles of the fruit-cavity; seeds with albument. Figure 116. **Amaryllideae.** 455

Calyceae hypogynae.

94. Petals corollaceous 95

Petals sepalaceous or absent 98

95. Flowers symmetrical 96

Flowers unsymmetrical 97

96. Fruit usually entire.

Nearly always land-plants; flowers often showy; sepals three, generally petal-like, sometimes coherent towards the base; petals three, not rarely downward connate with the sepals; stamens generally six; fruit longitudinally dehiscent or indehiscent; embryo enclosed in the carnulent or horny albument. Figures 117 to 119. **Liliaceae.** 457

Fruit consisting of distinct fruitlets.

Swamp-plants; sepals and petals always three, the latter conspicuous and fugacious, often white; seeds without any albument. Figure 121. **Alismaceae.** 480

97. Anther one.

Usually swamp-plants; sepals petal-like, two; petals two; stamen one; style one; stigma undivided; fruit longitudinally dehiscent; embryo enclosed in the somewhat starchy albument. **Philhydreae.** 481

Anthers three.

Almost rush-like plants; sepals three, one petal-like; petals three, connate into a corolla; fertile stamens three; sterile stamens usually three and bearded; stigmas three; fruit one-celled, dehiscent; placentas three; embryo outside the albument. Figure 122. **Xrrideae.** 482

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98. Petals absent **99**

Petals usually developed, sepalaceous **100**

99. Leaves much elongated.

Swamp-plants; staminate and pistillate flowers always distinct, crowded into cylindric spikes or into headlets; sepals and petals scale-like or capillary; stamens few or many; stigmas one or two; fruit one- or two-celled; seeds solitary; embryo within the albument.

Typhaceae. **483**

Minute frond-like organs instead of leaves.

Floating plants; sepals and petals none; stamens one or two; fruit one-celled; albument enclosing the embryo or absent. **Lemnaceae.** **484**

100. Seeds without any albument, embryo comparatively large.

Aquatic, rarely terrestrial plants, often floating; sepals three or less or absent; petals three or less, often sepal-like, never bright-colored, often succulent, minute or absent; fruit consisting of distinct or coherent fruitlets. Figure 120. **Fluviales.** **485**

Seeds with albument, embryo comparatively minute **101**

101. Embryo placed within the albument or contained in an opening near the surface of the albument ... **102**

Embryo placed outside the albument **103**

102. Stamens and pistils never in the same flowers.

Palms, mostly superb plants, often tall, sometimes climbing; flowers seldom showy; sepals three, equal, and petals three, equal, all frequently glumaceous; stamens often six; stigmas three; fruit seldom very small, usually one-celled and one-seeded, or rarely consisting of three distinct fruitlets, always indehiscent; embryo comparatively minute, placed in an opening near the surface of the albument. **Palmae.** **492**

Stamens and pistils usually in the same flowers.

Rushes; flowers very small; sepals three and petals three, similar to each other and glumaceous; stamens three or six; stigmas three; fruit always very small, longitudinally dehiscent, one- or three-celled; seeds erect; embryo minute, placed within the albument. Figure 123.

Juncaceae. **493**

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103. Leaves mostly well developed, basal and somewhat pellucid.

Usually small plants; flowers always minute, in a single terminal head-like spikelet; staminate and pistillate flowers distinct, but within the same spikelet; sepals and petals three each or fewer, almost transparent or whitish, the petals not rarely connate into a corolla, very seldom absent; stigmas three or two; fruit three- or two-celled, always dehiscent; seed solitary, pendent. **Eriocauleae.** 494

Leaves often rudimentary, scattered and rigid.

Usually rush-like plants, some twining; clasping leafstalks slit longitudinally; staminate and pistillate flowers mostly on distinct plants; sepals and petals three or two each, glumaceous, occasionally much reduced or absent; stigmas three or two; fruit one- to three-celled, longitudinally dehiscent or indehiscent. Figure 124. **Restiaceae.** 495

Acalyceae hypogynae.

104. Clasping leafstalks tubular, unopened.

Stems usually solid, nodeless; stamens and pistils in the same or in distinct flowers, but rarely on separate plants; floral bracts solitary; sepals and petals rudimentary or absent; ovule solitary, erect; fruit one-celled, indehiscent; embryo enclosed within the albument. Figure 125.
Cyperaceae. 502

Clasping leafstalks open longitudinally.

Stems usually hollow, hardly ever angular; continuity of stems intercepted by nodes; stamens and pistil often in the same flower; sepals and petals rudimentary or absent; covering floral bract (palea) consisting of two connate bracteoles or sepals lined by two venules: ovule solitary, erect; fruit (grain, caryopsis) often adherent or adnate to the covering bract, indehiscent; embryo lateral and external at the base of the albument. Figure 126.
Gramineae. 518

Acotyledoneae vasculares.

105. Fruiting organs often emanating at or near the roots.

Aquatic or rarely terrestrial plants, never large; foliaceous organs scale-like, frond-like or stalk-like; fruiting organs generally free from the leaf-like or frond-like organs. Figures 127 and 128. **Rhizospermae.** 559

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Fruiting organs often emanating at or near the summit of stems or branchlets or at or near the under-side of fronds **106**

106–7. Foliaceous organs leaf-like.

Terrestrial plants, seldom tall; fruiting organs generally free from the leaf-like organs, often emanating at or near the summit of stems or branchlets; spore-caselets often arranged in spikes and supported by bract-like organs. Figures 129 to 131. **Lycopodinae.** **562**

Foliaceous organs converted into fronds.

"Ferns," from dwarf to tall, some even of palm-like stature; fruiting organs generally adnate to fronds. Figures 132 to 152. **Filices.** **565**

The Acotyledoneae evasculares, numbering even more Victorian species than the di- and mono-cotyledonous plants taken together, and comprising Mosses, Lichens, Fungs and Algs, require to be treated in a separate volume, and need to a large extent high microscopic power, not readily available in the field, for recognition.

GENERA OF PLANTS.

RANUNCULACEAE.

108. Petals present **109**

Petals absent **110**

109. Fruitlets crowded on a short receptacle.

Herbs, often perennial; leaves chiefly basal, usually incised; sepals overlapping before expansion, simply sessile; fruitlets indehiscent, terminated by a short style. "Buttercup." Figure 1. **Ranunculus.** **587**

Fruitlets crowded on a much elongated receptacle.

Minute, annual herbs; leaves all basal, very narrow, undivided; sepals extended downwards beyond the point of insertion; fruitlets very minute, indehiscent, exceedingly numerous. "Mousetail." **Myosurus.** **595**

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110. Fruitlets crowded on a short receptacle, terminated by an elongated often almost feathery style.

Climbers; leaves opposite, usually compound; sepals contiguous before expansion, petaloid, generally four; fruitlets indehiscent. **Clematis.** 596

Fruitlets in a single whorl, terminated by a short style.

Glabrous herbs, often semiaquatic and alpine; leaves all at or near the root; sepals overlapping before expansion, petaloid; fruitlets dehiscent. **Caltha.** 597

MAGNOLIACEAE.

111. Sepals two or three; fruitlets generally succulent.

Petals two or more; filaments broad; cells of anthers distinct; fruitlets in a single and often imperfect whorl. Figure 3. **Drimys.** 598

NYMPHAEACEAE.

112. Sepals and petals usually three.

Aquatic herbs; stamens six or more; fruitlets two to four, disconnected, indehiscent. **Cabomba.** 599

ANONACEAE.

113. Calyx opening by a lid.

Petals none; sterile stamens numerous, petaloid; fruit urnshaped or invertedly broad-conical. **Eupomatia.**

DILLENIACEAE.

114. Sepals and petals always five; fruitlets dehiscent.

Shrubs or half-shrubs, some climbing; leaves seldom large, often entire; petals always yellow; number of stamens indefinite; filaments capillary; anthers bursting longitudinally or seldom at the summit only. Figure 2. **Hibbertia.** 601

MONIMIEAE.

115. Fruitlets enclosed; fruit-calyx cup-shaped.

Calyx lobed, the lobes of the pistillate calyx finally deciduous; filaments short, with two appendages; anthers opening by valves; style elongated, almost plumous. "Native Sassafras." **Atherosperma.** 611

Fruitlets exserted; fruit-calyx quite expanded.

Calyx permanently indented; filaments none; anthers opening by slits; style obliterated. Figure 4. **Hedycarya.** 612

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MENISPERMEAE.

116. Petals longer than the calyx, very turgid.

Flowers small, in racemes; stamens two or three; anthers divergent; fruitlets three to six. Figure 6.

Sarcopetalum. 613

Petals shorter than the calyx, slightly turgid.

Leaves fixed above the base; flowers minute, in umbels; anthers circularly adnate; fruitlets solitary.

Stephania. 614

LAURACEAE.

117. Twining plants without any conspicuous leaves.

Fruitlet enclosed in the enlarged often succulent tube of the calyx; lobes of the calyx six, minute. Figure 5.

Cassytha. 615

PAPAVERACEAE.

118. Fruit opening by small apertures under the stigmatic summit.

Herbs, usually annual and hardly or not much branched; leaves usually indented; sepals two; petals four; stigmas radiatingly adnate to the summit of the ovulary. "Poppies."

Papaver. 618

CRUCIFERAE.

119. Fruit separated by transverse articulation into an upper and a lower portion.

Maritime succulent herbs; petals white or purplish; fruit abbreviated, each of its two divisions one-seeded. "Sea-Rocket."

Cakile. 619

Fruit bivalved **120**

120. Petals extended into a terminal long and acute attenuation.

Slender herbs; petals white, yellowish or orange-colored; fruit from narrow-ellipsoid to globular, abbreviated; dissepiment present; seeds few or several.

Stenopetalum. 619

Petals obtuse **121**

121. Dissepiment absent.

Small, annual herbs; petals white or purplish; fruit abbreviated, from elliptical-ovate to globular; seeds numerous, very minute, on long funicles.

Menkea. 621

Dissepiment present **122**

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122. Fruit abbreviated **123**

Fruit elongated **126**

123. Seeds one or two in each cell **124**

Seeds more than two in each cell **125**

124. Fruit compressed towards the sides of the dissepiment.

Herbs, often beset with branched hairlets; petals white, purplish or yellow; fruit from elliptical to orbicular; dissepiment broad; seeds usually one or two in each cell; radicle turned to the edges of the cotyledons.

Alyssum. 622

Fruit compressed towards the edge of the dissepiment.

Herbs or half-shrubs; petals white or somewhat purplish; fruit almost oval or nearly obcordate, compressed; dissepiment very narrow; seeds usually one in each cell; radicle turned to the sides of the cotyledons.

Lepidium. 623

125. Dissepiment broad.

Herbs, often semiaquatic; sepals spreading; petals white or oftener yellow; fruit usually almost ellipsoid, turgid; seeds many, usually in two rows; radicle turned to the edges of the cotyledons. **Nasturtium.** 628

Dissepiment narrow.

Herbs, usually annual; petals white or yellow; fruit almost ellipsoid or nearly obcordate, compressed; seeds usually more than two in each cell; radicle turned to the sides of the cotyledons. **Capsella.** 629

126. Fruit-valves almost without any longitudinal dorsal venule.

Herbs often glabrous; sepals usually erect, almost equal; petals white or purplish; fruit mostly narrow-cylindrical and somewhat compressed; seeds numerous, usually forming one row in each cell; radicle turned to the edges of the cotyledons. **Cardamine.** 631

Fruit-valves with one to three longitudinal dorsal venules **127**

127. Fruit-valves lined by one venule **128**

Fruit-valves usually lined by three venules **130**

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128. Radicle turned to the sides of the cotyledons.

Herbs, often beset with branched hairlets; sepals erect, almost equal; petals white, purplish or yellow; fruit nearly cylindrical, rarely almost ellipsoid; seeds several or numerous, forming one or two irregular rows in each cell; funicle rigid. Figure 8. **Erysimum.** 635

Radicle turned to the edges of the cotyledons ... 129

129. Fruit almost quadrangular.

Herbs, mostly glabrous; leaves usually much lobed; sepals generally erect, almost equal; petals yellow; fruit narrow; seeds several or numerous, forming one row in each cell. **Barbarea.** 639

Fruit almost compressed.

Herbs, either glabrous or beset with branched hairlets; leaves usually beyond their base lobeless; sepals often unequal, generally erect; petals white or purplish; fruit narrow-cylindrical; seeds several or numerous, forming one or two rows in each cell, with a prominent margin. **Arabis.** 640

130. Stigma pointed.

Herbs, beset with simple or branched hairlets; sepals erect, two often with turgidly enlarged base; petals white or purplish; fruit usually cylindrical and somewhat compressed; seeds numerous, forming one or two irregular rows in each cell; radicle turned to the sides of the cotyledons. **Wilckia.** 641

Stigma blunt.

Herbs, either glabrous or beset with simple hairlets; sepals erect or spreading, almost equal; petals white, purplish or yellow; fruit narrow-cylindrical, rarely for maturation buried and then comparatively short and broad (Geococcus); funicle capillary; seeds numerous, forming one or two irregular rows in each cell; radicle turned to the sides of the cotyledons. **Sisymbrium.** 642

CAPPARIDEAE.

131. Petals four; fruit indehiscent.

Shrubs, erect or climbing, or trees; leaves simple; sepals four, free or the two outer quite connate; stamens disconnected; ovulary on a stalk-like prolongation (stipes); stigma sessile. Figure 7. **Capparis.** 645

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DROSERACEAE.

132. Styles two to five; fruit one-celled.

Herbs, beset with gland-bearing hairlets; stamens four to eight, often five. "Sundew." Figure 11. **Drosera.** 646

VIOLACEAE.

133. Fruit valveless, succulent.

Shrubs, often somewhat spinescent; flowers small; sepals fixed at their base; petals equal, none protruding into a hollow base. **Hymenanthera.** 655

Fruit three-valved 134

134. Lowest petal much longer than the others.

Herbs, less frequently shrubs; leaves scattered; sepals fixed at or near their base; lowest petal protruding into a hollow base. Figure 9. **Hybanthus.** 656

Lowest petal slightly longer than the others.

Nearly always herbs; leaves often basal; flowers solitary on an elongated stalk; sepals fixed above their base; lowest petal protruding into a hollow base. **Viola.** 658

POLYGALEAE.

135. Fruit rounded at the base.

Herbs or shrubs; lower petal usually crested at the summit; seeds devoid of descending long hairlets. **Polygala.** 660

Fruit usually contracted into a long narrow base.

Herbs or shrubs, rarely twiners; lower petal never crested at the summit; seeds invested with descending long hairlets. Figure 13. **Comesperma.** 661

HYPERICINAE.

136. Fruit splitting along the dissepiments.

Herbs or shrubs; leaves usually opposite, transparently dotted; styles often three; petals from yellow to orange-colored. **Hypericum.** 667

ELATINEAE.

137. Sepals blunt.

Aquatic plants, never large; outer portion of fruit membranous. **Elatine.** 668

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Sepals pointed.

Small terrestrial plants; outer portion of fruit firm. Figure 12. **Bergia.** 669

PITTOSPOREAE.

138. Fruit indehiscent, succulent.

Somewhat woody twiners or climbers; petals coherent into a tube; stamens surrounding the pistil; anthers opening by longitudinal slits. **Billardiera.** 670

Fruit dehiscent 139

139. Stamens all bent to one side.

Perennial plants, often small and erect; petals divergent from the base; anthers opening by terminal pores; fruit bursting by longitudinal slits. **Cheiranthera.** 672

Stamens surrounding the pistil 140

140. Valves of the fruit thick.

Shrubs or trees; petals coherent into a tube; anthers opening by longitudinal slits; fruit opening longitudinally. **Pittosporum.** 673

Valves of the fruit thin 141

141. Seeds one, two or three in each fruit-cell.

Petals divergent from the base; anthers opening by longitudinal slits; fruit much compressed, opening only near the summit; seeds flat. **Bursaria.** 676

Seeds several in each fruit-cell.

Petals divergent from the base or coherent into a tube; anthers opening by longitudinal slits; fruit slightly compressed, opening longitudinally; seeds often turgid. Figure 10. **Marianthus.** 677

RUTACEAE.

142. Fruit entire, somewhat pulpy.

Trees; leaves opposite, large, often simple; calyx four-cleft; petals four; stamens eight; fruit four-celled. **Acronychia.** 678

Fruit divided into fruitlets, dry 143

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143. Petals five **144**

Petals four **145**

144. Stamens five.

Shrubs or trees; leaves scattered, always simple; calyx five-cleft; fruitlets five, blunt. **Geijera.** 679

Stamens nearly always ten.

Shrubs, rarely trees; leaves scattered, always simple; calyx five-cleft or rarely obliterated; fruitlets five, pointed, spreading or seldom laterally coherent. Figure 15. **Eriostemon.** 680

145. Stamens four.

Shrubs, rarely trees; leaves opposite, often consisting of three leaflets; calyx four-cleft; fruitlets four, spreading, blunt. **Zieria.** 702

Stamens eight **146**

146. Petals comparatively small.

Shrubs or semiherbaceous plants; leaves opposite, simple or compound; calyx four-cleft; fruitlets four, spreading, blunt. **Boronia.** 705

Petals comparatively large.

Shrubs, rarely small trees; leaves opposite, always simple; calyx large, undivided or rarely four-cleft; fruitlets four, erect, laterally coherent, blunt. Figure 14. **Correa.** 712

CELASTRINAE.

147. Fruit two- to four-valved.

Shrubs, often climbing, or small trees; leaves scattered; seeds one or two in each cell, much enclosed in a succulent appendage. Figure 28. **Celastrus.** 715

LINEAE.

148. Sepals, petals and styles five.

Herbs; leaves small, without any denticulation. "Flax." **Linum.** 716

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STACKHOUSIEAE.

149. Lower portion of petals cohering or connate into a tube.

Herbs or half-shrubs; calyx five-lobed; fruitlets usually three. Figure 29. **Stackhousia.** 717

SAPINDACEAE.

150. Outer portion of fruit membranous.

Shrubs from quite dwarf to very tall, rarely somewhat herbaceous; calyx four- or five-lobed; petals none; fruit two- to six-celled; seeds small, without any appendage. Figure 27. **Dodonæa.** 721

Outer portion of fruit almost crustaceous or lignescent 151

151. Calyx entire or irregularly denticulated.

Shrubs or small trees; leaves simple, entire or lobed; petals none; fruit with four or less lobes, scarcely bursting; seeds rather large, about half enclosed in a succulent appendage. **Heterodendron.** 729

Calyx five-lobed.

Trees, not rarely tall; leaves pinnate, leaflets large; petals minute; fruit two- or three-lobed, often bursting irregularly; seeds rather large, high-enclosed in a succulent appendage. **Nephelium.** 730

ZYGOPHYLLEAE.

152. Fruit simple.

Shrubs; leaves simple, scattered or fascicled, succulent; flowers many, terminal; petals curved inward at the margin, whitish; fruit one-seeded, hard inside, succulent outside. Figure 17. **Nitraria.** 731

Fruit compound 153

153. Fruit angular or lobed, succulent, dehiscent.

Herbs or shrubs, always succulent; leaves forming usually only one pair of leaflets; flowers solitary; petals flat, tender, often yellow; fruit four- to five-angled, bursting longitudinally. Figure 16. **Zygophyllum.** 732

Fruit divided into hard indehiscent long-coherent fruitlets.

Herbs; leaves forming usually several pairs of pinnately arranged thin leaflets; flowers solitary; petals flat, tender, often yellow. **Tribulus.** 738

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GERANIACEAE.

154. Fruit without any terminal elongation.

Usually herbs, always acidulous; leaflets three or more, terminal on the leafstalk; no nectar-tube descending from the calyx; petals equal; fruit five-valved, the valves not seceding from the axis. **Oxalis.** 739

Fruit with a very conspicuous terminal elongation ... 155

155. Petals unequal.

Herbs or shrubs; leaves often longer than broad; flowers generally in umbels; nectar-tube conspicuous, descending from the calyx; elongations of fruit spirally seceding in five segments upwards from the axis, each carrying a fruitlet. Figure 18. **Pelargonium.** 740

Petals equal 156

156. Elongations of the fruitlets coiledly seceding from their axis upwards.

Usually herbs; leaves often as broad as long or broader; flowers generally two together or solitary; nectar-tube absent; elongations carrying each a fruitlet. **Geranium.** 741

Elongations of fruitlets spirally seceding from their axis upwards.

Usually herbs; leaves often longer than broad; flowers generally in umbels; nectar-tube absent; elongations carrying each a fruitlet. **Erodium.** 742

MALVACEAE.

157. Floral bracts absent 158

Floral bracts present 161

158. Stamens and pistils mostly in distinct flowers.

Herbs or shrubs or small trees; petals generally not large; stigmas decurrent; fruitlets irregularly bursting, one-seeded. **Plagianthus.** 743

Stamens and pistils always in the same flowers ... 159

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159. Fruit consisting of one-seeded fruitlets.

Herbs or shrubs; petals generally small, often yellow; stigmas terminal; fruitlets seceding, imperfectly or hardly dehiscent. **Sida.** 745

Fruit valvate or consisting of two- or more-seeded fruitlets 160

160. Fruit consisting of connate or coherent fruitlets.

Herbs or shrubs or rarely small trees; petals generally large, often yellow; stigmas terminal; fruitlets dehiscent. **Abutilon.** 746

Fruit three-valved.

Tall shrub; petals violet; stigmas terminal; seeds two in each fruit-cell. Figure 19. **Howittia.** 747

161. Floral bracts five or more.

Herbs or shrubs or small trees; petals often large; floral bracts connate; stigmas terminal; fruit five-valved; seeds few or several in each fruit-cell. **Hibiscus.** 748

Floral bracts three.

Herbs or shrubs; petals generally large, often bluish or pink; floral bracts connate; stigmas decurrent; fruit consisting of one-seeded, indehiscent, seceding fruitlets. **Lavatera.** 749

TREMANDREAE.

162. Anthers quadrangular.

Perennial herbs or somewhat shrubby plants; leaves small, scattered or somewhat whorled, rarely absent; petals red, exceptionally white; anthers attenuated at the summit. **Tetratheca.** 750

... .

TILIACEAE.

163. Fruit smooth, lobeless, somewhat succulent and often blue outside, hard inside.

Trees, often tall; petals at the upper end fringed or denticulated or rarely entire; anthers narrow, at the summit dehiscent. Figure 22. **Elaeocarpus.** 751

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STERCULIACEAE.

164. Calyx supported by three bracts 165

Calyx unsupported by bracts 166

165. Stipules conspicuous.

Shrubs; calyx persistent, often membranous; petals very minute or absent; stamens five; fruit three- to five-valved, smooth. **Thomasia.** 752

Stipules none.

Shrubs; calyx persistent, often firm; petals very minute or absent; stamens five; fruit three-valved, smooth. Figure 20. **Lasiopetalum.** 753

166. Fruit five-valved.

Shrubs or small trees; calyx persistent; petals dilated and inflexed at the base, narrowed at the summit; fertile stamens five; fruit beset with bristle- or thorn-like excrescences. **Commerçonia.** 758

Fruit consisting of distinct fruitlets.

Usually trees, sometimes tall; calyx corollaceous, deciduous; petals absent; stamens numerous, connate. Figure 21. **Brachychiton.** 759

EUPHORBIACEAE.

167. Flowers devoid of sepals and petals, contained within a calyx-like involucre.

Herbs, far less commonly shrubs, always with abundant white acrid sap; calyx-like involucre small, with glands at its margin; staminate flowers several, one stamen to each; pistillate flowers solitary, central; fruit six-valved. "Spurge." **Euphorbia.** 760

Flowers provided with sepals, but devoid of any involucre 168

168. Fruit-valves usually two or three 169

Fruit-valves usually six 170

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169. Stamens generally few, disunited.

Shrubs or small trees; leaves comparatively large, always entire; sepals one to three; petals absent; anthers opening by longitudinal slits; fruit compressed, with two broad valves and two seeds. **Omalanthus.** 762

Stamens numerous, united.

Shrubs or small trees; leaves mostly small, entire; segments of calyx five; petals absent; anthers opening by longitudinal slits; fruit turgid, with usually three narrow valves and one or two seeds. Figure 23. **Bertya.** 763

170. Petals present 171

Petals absent or rudimentary 172

171. Sepals longer than the petals.

Shrubs; leaves entire; stamens numerous, crowded; anthers opening by longitudinal slits; stigma sessile, depressed, lobeless. **Beyeria.** 765

Sepals shorter than the petals.

Shrubs; leaves usually narrow, entire; stamens numerous, connate; anthers opening by longitudinal slits. **Ricinocarpus.** 767

172. Anthers opening by terminal pores.

Herbs or half-shrubs; leaves narrow or small, entire; sepals five, petaloid, whitish; petals rudimentary; stamens five, disunited. **Poranthera.** 768

Anthers opening by longitudinal slits 173

173. Calyx lobed.

Herbs or half-shrubs; leaves mostly small; calyx-lobes three to five; petals absent; stamens ten or fewer, disunited. **Amperea.** 770

Calyx consisting of sepals 174

174. Sepals usually three.

Shrubs or trees; leaves comparatively large, entire or indented; petals absent; stamens many, disunited; anthers blunt, their cells turgid. **Claoxylon.** 771

Sepals more than three 175

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175. Stamens numerous.

Shrubs; leaves comparatively large, always indented; sepals four or five; petals sepal-like or absent; stamens crowded; anthers pointed, their cells narrow. **Adriana.** 772

Stamens few 176

176. Leaves ternately joined.

Shrubs or somewhat herbaceous plants; leaves small, entire; sepals six; petals absent; stamens disunited. **Micrantheum.** 773

Leaves scattered 177

177. Seeds one in each fruit.

Shrubs or half-shrubs; leaves small, entire; sepals generally six; petals absent; stamens disunited; styles three, undivided. **Pseudanthus.** 774

Seeds several in each fruit.

Herbs or shrubs; leaves mostly small, entire, not seldom placed unilaterally and averse to the flowers; sepals generally six; petals absent; styles three, usually bilobed. **Phyllanthus.** 775

CUPULIFERÆ.

178. Pistillate flowers two to four within a scaly, at length prickly or fringy involucre of connate bracts.

Usually trees, often tall; staminate flowers crowded or only three or two together or solitary, their calyx lobed; stamens few, several or many; calyx of pistillate flowers adnate; ovulary three-celled; styles three; fruits (nuts) triangular. "Beech." **Fagus.** 780

URTICACEÆ.

179. Woody 180

Herbaceous 181

180. Flowers cymosely disposed.

Evergreen trees; sepals usually five; stamens five, erect while in bud; stigmas two. Figure 24. ... **Trema.** 781

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Flowers crowded within a turgid almost closed receptacle.

Trees oftener evergreen than with deciduous foliage; flowers minute; staminate pistillate and neuter flowers distinct. "Figtrees." **Ficus.** 782

181. Calyx consisting of sepals.

Weak herbs, beset with hooked hairlets; leaves entire; stipules absent; sepals usually four; stamens four, inflected while in bud; stigma one. **Parietaria.** 783

Calyx lobed.

Weak herbs; leaves denticulated; stipules present; calyx-lobes two to five; stamen one; stigma one. **Australina.** 784

CASUARINEAE.

182. Fruit-bearing bracteoles lignescent, blunt or simply acute or far less frequently thorn-like pointed.

Annual concentric layers of wood well marked; medullary rays very conspicuous; ample vascular tubes and parenchyma well developed in the wood. Figure 25. **Casuarina.** 785

PHYTOLACCEAE.

183. Fruitlets two or more, distinct, on or around a columnar axis.

Herbs or shrubs; valves rigid. Figure 43. **Didymotheca.** 790

Fruitlets numerous, coherent into an almost bell-shaped fruit.

Shrubs or oftener small trees; fruitlets bursting along the inner edge; valves membranous. **Codonocarpus.** 791

FICOIDEAE.

184. Calyx consisting of sepals.

Always herbs; leaves scattered or crowded at intervals, never very succulent; sepals five; petals few; stamens few or several; staminodia present; fruit membranous, bursting longitudinally, many-seeded. Figure 41. **Mollugo.** 792

Calyx lobed 185

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185. Petals numerous.

Herbs or shrubs; leaves very succulent, mostly opposite; stamens numerous; fruit succulent, its cells slit at the depressed summit, many-seeded. Figure 39.
Mesembrianthemum. 794

Petals none.

Herbs or shrubs; leaves rather succulent, scattered; stamens few or several; fruit rather or quite succulent, indehiscent, few-seeded. Figure 40. **Tetragonia.** 795

CARYOPHYLLEAE.

186. Calyx consisting of sepals 187

Calyx short-lobed 191

187. Stipules absent 188

Stipules present 190

188. Valves of fruit twice as many as styles.

Leaves often broadish; sepals usually five; petals bifid; stamens usually ten; styles generally three.
Stellaria. 796

Valves of fruit as many as styles 189

189. Stamens opposite to the sepals.

Leaves always very narrow; sepals four to five; petals four to five or absent; stamens usually four or five; styles four or five. **Sagina.** 799

Stamens alternate with the sepals.

Perennial plants, often of turfy growth; sepals four to five; petals absent; stamens four to five; styles four to five. Figure 32. **Colobanthus.** 800

190. Sepals prominently keeled.

Leaves broadish; sepals five; petals very minute; stamens three to five, opposite to the sepals; styles three; valves of fruit as many as styles. **Polycarpon.** 801

Sepals without a prominent keel.

Leaves narrow; sepals usually five; petals five or none; stamens generally ten; styles three or five; valves of fruit as many as styles. **Spergularia.** 802

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191. Petals five.

Herbs or half-shrubs; leaves broad or narrow; stipules absent; stamens ten, inserted at the base of the calyx; styles generally two; fruit usually four-valved.
Saponaria. 803

Petals none.

Leaves always narrow; stipules absent; stamens one to ten, inserted at the orifice of the calyx; styles two; fruit valveless. Figure 33. **Scleranthus.** 804

PORTULACEÆ.

192. Fruit valveless, transversely dehiscent.

Succulent herbs; petals generally disunited. **Portulaca.** 807

Fruit valvate 193

193. Petals disunited.

Succulent herbs or half-shrubs. Figure 31. **Claytonia.** 808

Petals connate into an unilaterally slit corolla.

Small herb, somewhat succulent. **Montia.** 813

NYCTAGINEÆ.

194. Leaves opposite.

Herbs or half-shrubs; flowers umbellate or paniculate or crowded; involucre none; upper portion of the calyx corollaceous, folded, hardly lobed, lower portion including the fruit; stamens one to five; fruit furrowed, nearly always beset with stalked glandules. Figure 44.
Boerhaavia. 814

POLYGONACEÆ.

195. Sepals six, the inner larger.

Herbs, rarely half-shrubs; outer sepals spreading, inner callously thickened; stamens usually six; styles three; stigmas bearded or fringed. **Rumex.** 815

Sepals five, nearly equal 196

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196. Sepals almost unchanged in age.

Herbs, rarely half-shrubs or climbers; stamens and pistils usually in the same flowers; stamens often five to eight; styles two or three; stigmas generally smooth.
Polygonum. 818

Sepals enlarged and often succulent in age.

Herbs or oftener shrubs or climbers; staminate and pistillate flowers usually distinct; stamens usually eight; styles three; stigmas mostly fringed. Figure 42.
Muehlenbeckia. 824

AMARANTACEAE.

197. Sepals usually much elongated.

Herbaceous or shrubby plants; leaves scattered, often broadish and large; sepals five; anthers two-celled; stigma one. Figure 35. **Ptilotus.** 829

Sepals always much abbreviated 198

198. Leaves opposite.

Herbaceous plants; leaves broadish, small; sepals five; anthers one-celled; stigmas two. **Alternanthera.** 835

Leaves scattered 199

199. Bracteoles supported by a bract.

Herbaceous plants; leaves broadish, often large; sepals five or fewer; anthers two-celled; stigmas two or three.
Euxolus. 836

Bracteoles unsupported by a bract.

Herbaceous plants; leaves narrow, small; sepals five; anthers one-celled; stigmas two. Figure 34.
Polycnemon. 837

SALSOLACEAE.

200. Leaves rudimentary or absent.

Herbs or shrubs; calyx unchanged in age; fruits concealed within the joints of terminal spikes; embryo incompletely annular. Figure 38. **Salicornia.** 838

Leaves well developed 201

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201. Leaves broadish 202

Leaves narrow 205

202. Calyces of two forms, one form involucral.

Herbs or shrubs; leaves flat, often comparatively large; calyx of staminate flowers five-lobed, unchanged in age; calyx of pistillate flowers bi-lobed, enlarged in age; embryo incompletely annular. **Atriplex.** 840

Calyces all of one form 203

203. Fruit very succulent.

Shrubby rarely herbaceous plants; leaves flat, often comparatively large; calyx constantly five-lobed, unchanged in age; fruit depressed; embryo incompletely annular. **Rhagodia.** 854

Fruit dry 204

204. Sepals usually five, opaque, upwards almost flat.

Herbaceous or rarely shrubby plants; leaves flat, often large; calyx unchanged in age; embryo incompletely annular. **Chenopodium.** 857

Sepals three or one, transparent, upwards dilated and concave.

Small herbs; leaves flat, small; calyx unchanged in age, minute; stamens three or one; styles two or one; embryo incompletely annular. **Dysphania.** 862

205. Fruit-bearing calyx provided with appendages ... 206

Fruit-bearing calyx devoid of appendages 208

206. Fruit-bearing calyx enlarged into five or less narrow often spinule-like sometimes minute appendages.

Herbs or oftener shrubs; leaves small, almost cylindrical; embryo incompletely annular. Figure 36. (Chenolea.) **Bassia.** 863

Fruit-bearing calyx enlarged into five disconnected or connate broad horizontal membranous appendages ... 207

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207. Embryo incompletely annular.

Herbs or oftener shrubs; leaves small, almost cylindrical. Figure 37. **Kochia.** 872

Embryo coiled.

Herbs or half-shrubs; leaves almost cylindrical. **Salsola.** 883

208. Fruit-bearing calyx unchanged and hardly succulent.

Herbs or half-shrubs; leaves almost cylindrical; embryo coiled. **Suaeda.** 884

Fruit-bearing calyx enlarged and very succulent ... 209

209. Fruit-bearing calyx depressed-globular.

Half-shrub; leaves small, almost cylindrical; embryo incompletely annular. **Enchylaena.** 885

Fruit-bearing calyx erect, truncate-ellipsoid.

Half-shrub; leaves small, almost cylindrical; embryo incompletely annular. **Threlkeldia.** 886

FRANKENIACEAE.

210. Calyx tubular.

Herbs or shrubs; petals much narrowed towards the base; fruit one-celled, dehiscent, many-seeded. **Frankenia.** 887

PLUMBAGINEAE.

211. Calyx almost funnel-shaped.

Herbs or half-shrubs; leaves often near the root, generally rigid; spikes mostly paniculated; upper portion of calyx often transparent; styles disjointed, glabrous; fruit enclosed, one-seeded. Figure 30. **Statice.** 888

LEGUMINOSAE.

212. Petals equal.

Shrubs or trees; leaves doubly pinnate or often reduced to dilated leafstalks; petals all disconnected or all connate, always contiguous before expansion; stamens often numerous; flowers usually minute and equally yellow, crowded into headlets or spikes. Figures 50 and 51. **Acacia.** 889

Petals unequal... 213

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213. Petals all disconnected.

Herbs or oftener shrubs, rarely trees; leaves simply pinnate or rarely reduced to dilated leafstalks; flowers often large and provided with conspicuous stalklets; upper petal inside before expansion; stamens usually ten or fewer. Figure 49. **Cassia.** 950

The two lowest petals usually connate.

Upper petal outside before expansion; stamens ten, curved upwards. Figures 45 to 48 214

214. Stamens all disconnected 215

All or nine of the stamens connate 226

215. Lobes of the calyx contiguous before expansion ... 216

Lobes of the calyx overlapping before expansion ... 217

216. Seeds two.

Shrubby plants, sometimes tall; leaves almost obliterated; lobes of the calyx elongated; petals yellowish, rarely pink; fruit compressed, without any dissepiment. **Jacksonia.** 955

Seeds several.

Almost herbaceous or shrubby plants; leaves three-foliolate or pinnate, rarely simple; petals yellowish or red, the two lowest often darker; fruit almost globular, without any dissepiment. **Gompholobium.** 956

217. Fruit with a longitudinal dissepiment.

Shrubby plants, from dwarf to tall; leaves simple, usually scattered or ternately whorled; petals yellowish or of species elsewhere blue; fruit turgid; seeds several. Figure 45. **Mirbelia.** 958

Fruit without any dissepiment 218

218. Seeds several or numerous.

Shrubby plants, from dwarf to tall; leaves simple, generally opposite or whorled; petals yellowish, seldom reddish; fruit turgid. **Oxylobium.** 959

Seeds two 219

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219. **Leaves absent, rudimentary or imperfect** 220

Leaves nearly always present 221

220. **Upper lobes of the calyx united and much larger than the lower.**

Almost herbaceous or shrubby plants; stipules obliterated; petals yellowish or of species elsewhere red; fruit globular; seeds without any appendage. **Sphaerolobium.** 962

Lobes of the calyx nearly equal.

Tall and slender, not rarely arborescent shrub; leafstalks very elongated; petals yellowish; fruit minute, ovate, indehiscent. **Viminaria.** 963

221. **Fruit very inequilateral.**

Shrubby plants, from dwarf to tall, rarely arborescent; leaves simple, scattered, or in species chiefly elsewhere quite absent; petals yellowish or red; fruit oblique-triangular; seeds with an appendage (strophiole). **Daviesia.** 964

Fruit slightly inequilateral 222

222. **Leaves opposite.**

Shrubby plants, seldom tall; leaves simple; stipules obliterated; petals yellowish; fruit ovate; seeds with an appendage; calyx unsupported by bracteoles. **Eutaxia.** 970

Leaves scattered or irregularly crowded, rarely whorled 223

223. **Stipules developed.**

Leaves simple; calyx supported by almost membranous bracteoles; petals yellowish, rarely pink; fruit nearly ovate; seeds with an appendage. Figure 46. **Pultenaea.** 971

Stipules undeveloped 224

224. **Calyx supported by leafy bracteoles.**

Shrubby plants; leaves simple, scattered or irregularly crowded; fruit nearly ovate; seeds without any appendage. **Phyllota.** 1002

Calyx unsupported by bracteoles 225

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225. Seeds constantly provided with an appendage.

Half-shrubs or weak shrubby plants; leaves scattered or irregularly crowded; petals yellowish or reddish, the upper very broad; fruit nearly ovate, turgid.
Dillwynia. 1003

Seeds constantly unprovided with an appendage.

Half-shrubs or shrubby plants; leaves simple, scattered or whorled; petals yellowish; fruit nearly ovate. **Aotus.** 1008

226. All the stamens connate 227

Nine of the stamens connate, one disconnected. (Exceptions: Glycine partly, Desmodium partly) 232

227. Leaves simple or less frequently absent 228

Leaves compound, consisting of two or three leaflets 231

228. Five anthers abbreviated and five elongated ... 229

Anthers equal 230

229. Petals blue.

Shrubs, rarely almost herbaceous plants; flowers usually but few together, or some solitary; fruit turgid; seeds with an appendage. **Hovea.** 1009

Petals yellow or red.

Shrubs, rarely almost herbaceous plants; flowers mostly dispersed; fruit compressed; seeds with an appendage.
Templetonia. 1010

230. Fruit bursting along both edges.

Shrubs or half-shrubs, rarely herbaceous plants; leaves often alternate and forming two rows, or absent; flowers dispersed; petals yellowish; fruit considerably compressed or flat; seeds with an appendage. **Bossiaea.** 1012

Fruit bursting along one edge.

Shrubs or half-shrubs; flowers dispersed; petals yellowish; fruit flat, its valves persistently connate along the broad-edged suturule; seeds with an appendage.
Platylobium. 1021

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231. Fruit unjointed.

Shrubs; leaves consisting of three leaflets; flowers in racemes; petals yellowish; anthers alternately elongated and abbreviated; fruit much compressed; seeds with an appendage. **Goodia.** 1024

Fruit jointed.

Herbaceous plants; leaves usually consisting of two leaflets; anthers alternately elongated and abbreviated; fruit-articules separately seceding, indehiscent. **Zornia.** 1025

232. Fruit jointed.

Herbs or shrubs; stipules present; sometimes all the stamens connate into a tube; anthers equal; fruit narrow, mostly elongated, the joints often partly seceding. **Desmodium.** 1026

Fruit unjointed 233

233. Leaves consisting of one or three leaflets, or of several leaflets placed radiatingly. (Exception: elsewhere Psoralea partly) 234

Leaves nearly always pinnate 239

234. Fruit with one seed 235

Fruit with two or more seeds 236

235. Seed free from the outer portion of the fruit.

Herbs or shrubs; stipules absent; anthers equal; ovulary with a single ovule; fruit minute, compressed, indehiscent. **Lespedeza.** 1027

Seed adherent to the outer portion of the fruit.

Herbs or shrubby plants, few arborescent, always glandular-dotted; stipules unlike the leaflets; petals usually red or blue; fruit minute, indehiscent; seed without any appendage. **Psoralea.** 1028

236. The two lowest leaflets replacing stipules.

Herbaceous or somewhat shrubby plants; leaves consisting of five leaflets or the floral leaves trifoliolate; lower petals pointed; filaments alternately dilated upwards; fruit narrow; seeds without any appendage. **Lotus.** 1032

Stipules very dissimilar to the leaflets 237

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237. Leaflets closely denticulated.

Odorous herbs; stipules adnate; lateral venules of the leaflets approximated, almost straight and parallel; fruit rather elongated, almost indehiscent; seeds several or many, without any appendage. Figure 47. **Trigonella.** 1033

Leaflets without any regular denticulation 238

238. Seeds provided with an appendage.

Herbaceous or woody plants, usually climbers or twiners; anthers equal; fruit bivalved, spuriously septate between the seeds. **Kennedya.** 1034

Seeds unprovided with an appendage.

Herbaceous plants, usually climbers or twiners; sometimes all the stamens connate; anthers equal; fruit bivalved, usually septate between the seeds. **Glycine.** 1036

239. Fruit perfectly dehiscent.

Herbs or shrubby plants, seldom very tall; hairlets of the general vestment two-branched, appressed; leaves usually pinnate or of species elsewhere consisting of one or three leaflets or rarely wanting; petals often pink or purplish; anthers pointed; fruit bivalved, narrow, generally elongated; seeds without any appendage. **Indigofera.** 1039

Fruit imperfectly dehiscent 240

240. Seeds several.

Herbs or less frequently somewhat shrubby plants, some deleterious; fruit turgid or inflated, depressed along the upper suturule; seeds without any appendage. **Swainsona.** 1040

Seeds one or two.

Glandular-viscid herbs, their roots often of sweetish taste; petals rather narrow; anthers bursting along their axis from the summit into two divergent valves; fruit rather short or very abbreviated, usually indehiscent; seeds without any appendage. Figure 48. **Glycyrrhiza.** 1048

THYMELEAE.

241. Stamens two, rarely one.

Shrubby or seldom herbaceous plants, few alpine; bark tough, acrid; calyx four-lobed; rudimentary petals always absent. Figure 74. **Pimelea.** 1049

Stamens four.

Dwarf, somewhat shrubby plants, always alpine; calyx four-lobed; rudimentary petals usually present. **Drapetes.** 1069

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ROSACEAE.

242. **Petals absent; stamens few** 243

Petals present; stamens many 244

243. **Fruit-calyx armed with hooked pricklets.**
Herbaceous plants; leaves pinnate; flowers minute; fruitlet small, solitary. **Acaena.** 1070

Fruit-calyx unarmed.
Herbaceous plants; leaves lobed; flowers minute; fruitlets small, four or less. **Alchemilla.** 1071

244. **Herbaceous** 245

Shrubby 246

245. **Styles persistent.**
Herbaceous plants; leaves pinnate with a large terminal leaflet; flowers conspicuous; calyx usually supported by five bracts, its lobes overlapping before expansion; styles rigid, elongated; fruitlets small, many. **Geum.** 1072

Styles deciduous.
Herbs or half-shrubs; leaflets pinnately or radiatingly arranged; flowers conspicuous; calyx supported by usually five bracts, its lobes contiguous before expansion; fruitlets small, many. **Potentilla.** 1073

246. **Fruitlets many, succulent, connate into a berry-like fruit.**
Generally shrubby and climbing plants; flowers conspicuous; calyx unsupported by bracts; fruitlets small, crowded. Figure 52. **Rubus.** 1074

Fruitlets few, hard, dry, coherent into a finally dehiscent fruit.
Shrubby or arborescent; flowers conspicuous at the upper end; calyx unsupported by near bracts; sepals four, coherent, dropping somewhat connectedly; petals four; fruitlets rather large, in a single whorl. **Eucryphia.** 1076

SAXIFRAGEAE.

(Including Crassulaceae.)

247. **Herbaceous plants, small or minute.**
Often annual and succulent; leaves opposite, frequently crowded; flowers minute; stamens as many as petals, three to five; fruitlets disconnected. Figure 54. **Tillaea.** 1077

Shrubby plants, erect or climbing 248

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248. Petals ten or less, conspicuous.

Erect or diffuse shrubs; leaves opposite, consisting of three leaflets, thus spuriously whorled; sepals ten or less; petals rose-colored; stamens numerous, rarely few; styles two; fruit dehiscent. Figure 53. **Bauera.** 1080

Petals rudimentary or absent.

Climbers or twiners; leaves opposite, simple; sepals four, expanding, persistent; stamens eight; styles four, coherent; fruit dry, undivided, indehiscent, one-seeded. **Aphanopetalum.** 1081

MYRTACEAE.

249. Ovulary with more than one cell 250

Ovulary with one cell 259

250. Fruit succulent.

Shrubs or trees; leaves usually large, constantly opposite; petals four or five, not seldom permanently coherent; stamens numerous, disconnected, elongated; ovulary two- or three-celled; fruit indehiscent, one-seeded. Figure 60. **Eugenia.** 1082

Fruit almost dry 251

251. Petals absent. (Exception: one Kunzea) 252

Petals present 253

252. Calyx-lobes semi-petaloid, dorsally pointed.

Trees, not rarely tall, or big shrubs; leaves large, often inequilateral, scattered or opposite; stamens disconnected, numerous, elongated; fruit three- or four-celled, vertically dehiscent, somewhat indurated, many-seeded. **Angophora.** 1083

Calyx-lobes changed into a lid.

Trees, often tall, some gigantic, less commonly large and exceptionally dwarf shrubs; leaves large, oftener scattered than opposite, frequently inequilateral; flowers in scattered or paniculated fascicles or umbels, rarely two together or solitary; petals absent or rarely present and then only rudimentary; stamens numerous, disconnected, often elongated; fruit vertically dehiscent, indurated, three- or more-celled, seldom two-celled; seeds many, ... but few fertile. Figures 58 and 59. **Eucalyptus.** 1084

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253. Fruit almost indehiscent.

Shrubs or trees; calyx-lobes four, soon enlarging; petals constantly four, whitish; stamens numerous, disconnected, elongated; fruit not much indurated, two-celled, many-seeded. **Backhousia.** 1121

Fruit dehiscent 254

254. Stamens connate into five sets 255

Stamens disconnected 256

255. Flowers arranged in cymes.

Shrubs or trees; leaves scattered or somewhat whorled, rarely opposite; petals often white or yellow; stamens numerous, exserted; fruit somewhat or quite hard, three-celled, vertically dehiscent, many-seeded. **Tristania.** 1122

Flowers always sessile.

Shrubs or trees, some tall; leaves scattered or opposite, seldom large; flowers soon infra-terminal in spikes or headlets; stamens numerous, exserted; filaments as well as petals oftener pink or purplish or whitish than yellow; fruit small, hard, always three-celled, vertically dehiscent, many-seeded. Figure 57. **Melaleuca.** 1123

256. Stamens long-exserted.

Shrubs, seldom dwarf, some arborescent; leaves always scattered; flowers soon infra-terminal in spikes; stamens numerous, usually in more than one row; fruit small, hard, always three-celled, vertically dehiscent. **Callistemon.** 1134

Stamens slightly or hardly exserted 257

257. Fruit usually much indurated.

Shrubs, seldom dwarf, some arborescent; leaves small, scattered or some crowded; flowers mostly scattered, usually sessile; petals white or somewhat pinkish; stamens numerous, disconnected, always in one row; fruit three- or more-celled, vertically dehiscent; seeds very narrow or flat. **Leptospermum.** 1139

Fruit scarcely indurated 258

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258. Leaves usually scattered.

Shrubs, from dwarf to tall, seldom arborescent; leaves scattered or some crowded, rarely opposite, usually small; petals white, yellow or pink; stamens numerous, short-exserted, usually in more than one row; fruit two- or more-celled, usually dehiscent, many-seeded; seeds turgid.
Kunzea. 1144

Leaves opposite.

Shrubs, from dwarf to tall, some arborescent; leaves small and often minute; petals usually white or pink; stamens five or more, mostly definite in number, enclosed, abbreviated, in one row; fruit two- or more-celled, dehiscent, generally few-seeded. **Baeckea.** 1149

259. Stamens five or ten 260

Stamens numerous 261

260. Staminodia present.

Shrubs, seldom tall; leaves oftener scattered than opposite; stamens ten, abbreviated, alternating with the staminodia, slightly connected; fruit usually one-seeded, indehiscent.
Darwinia. 1157

Staminodia absent.

Shrubs, from dwarf to tall; leaves small, always opposite; lobes of the calyx blunt or pointed; petals white or reddish, very seldom yellow; stamens five or ten, abbreviated, disconnected; fruit usually one-seeded, indehiscent. Figure 56. **Thryptomene.** 1158

261. Lobes of the calyx blunt or pointed.

Shrubs, from dwarf to tall; leaves very small, usually scattered; stamens many, disconnected, comparatively elongated; fruit usually one-seeded, indehiscent.
Lhotzkya. 1160

Lobes of the calyx ending in a long bristlet.

Shrubs, from dwarf to tall; leaves very small, scattered; stamens many, disconnected, comparatively elongated; fruit usually very narrow, one-seeded, indehiscent.
Calycothrix. 1161

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SALICARIEAE.

262. Petals conspicuous.

Herbs, from dwarf to tall; calyx elongated, much streaked, of somewhat herbaceous texture. **Lythrum.** 1162

Petals minute or absent.

Herbs always small; calyx abbreviated, membranous. **Ammannia.** 1163

ONAGREAE.

263. Lobes of calyx deciduous.

Herbs or somewhat shrubby plants; petals four, usually pink; fruit very narrow, much elongated, opening from the summit downwards into four valves; seeds terminated by long hairlets. **Epilobium.** 1164

Lobes of calyx persistent.

Herbs or rarely shrubs; petals four or five, yellow or white; fruit rather narrow and elongated, opening longitudinally; seeds without terminal hairlets. **Jussieua.** 1165

RHAMNACEAE.

264. Branchlets and leaves opposite.

Spinescent shrubs; leaves small or absent; tube of the calyx extended beyond the fruit; petals minute or absent; stamens four or five, very short; fruit small, dry. **Colletia.** 1166

Branchlets and leaves scattered or the latter crowded 265

265. Anthers almost broader than long.

Shrubs, from dwarf to tall; leaves seldom large; tube of the calyx extended beyond the fruit; petals minute, always present; stamens usually enclosed by the petals; fruit small, dry. **Cryptandra.** 1167

Anthers generally longer than broad.

Shrubs, less frequently trees; leaves often rather large; tube of the calyx entirely adnate to the fruit; petals minute or absent; stamens rather long; fruit small, dry. Figure 61. **Pomaderris.** 1176

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VINIFERAE.

266. Stamens singly opposite to the petals.

Climbers, with evergreen or deciduous foliage and with tendrils; leaves simple or compound, but hardly ever pinnate; stamens disconnected; ovulary usually two-celled, with two ovules in each cell; fruit succulent. Figure 26. (Genus the only one of the whole order).
Vitis. 1189

HALORAGEAE.

267. Calyx present 268

Calyx absent 270

268. Fruit usually one-seeded.

Herbs or somewhat shrubby plants, always terrestrial; leaves scattered, narrow, entire; petals rather large, two to four; stamens four to eight; stigmas two to four; fruit biangular or quadrangular; albument present.
Loudonia. 1190

Fruit two- or three- or four-seeded 269

269. Fruit finally seceding into fruitlets.

Herbs, partly or nearly submersed; leaves often divided into very narrow segments; petals never large, usually four in the staminate flowers, generally none in the pistillate flowers; stamens two to eight; stigmas two to four; fruit usually quadrangular; albument present.
Myriophyllum. 1191

Fruit never seceding into fruitlets.

Herbs or somewhat shrubby plants, mostly terrestrial; leaves scattered or opposite, often denticulated; petals four, rarely three or two, seldom large; stamens eight, rarely six or four; stigmas four or much less often two; fruit usually quadrangular, rarely tri- or bi-angular; albument present. Figure 55. **Haloragis.** 1197

270. Leaves small, undivided.

Herbs, often submersed; leaves opposite or the uppermost crowded, all quite entire; bracteoles two; sepals and petals none; stamen one; stigmas two; fruit compressed, two- or four-lobed, indehiscent. **Callitriche.** 1208

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Leaves large, divided into numerous capillary segments.

Herbs, always submersed; leaves whorled, their segments repeatedly dichotomous; involucre many-lobed; sepals and petals none; stamens ten to twenty; stigma one, narrow, elongated; fruit ellipsoid-ovate, one-seeded, indehiscent; albument absent. **Ceratophyllum.** 1209

ARALIACEAE.

271. **Leaves always simple.**

Shrubs, seldom arborescent; vestiture consisting of starry hairlets; leaves quite entire; petals contiguous before expansion; stamens five; styles two; fruits dry, much compressed, always two-celled. **Astrotricha.** 1210

Leaves variously compound, rarely simple.

Shrubs or trees; petals contiguous before expansion; stamens five; styles two; fruit usually succulent, compressed, nearly always two-celled. Figure 62.
Panax. 1211

UMBELLIFERAE.

272. **Fruit quite undivided, always one-seeded, but provided with two styles.**

Herbs; leaves often basal, seldom entire; umbels simple.
Actinotus. 1212

Fruit consisting of two cohering but at last seceding fruitlets, each provided with a style, rarely one fruitlet undeveloped 273

273. **Leaves or their lobes jointed** 274

Leaves or their lobes unjointed 275

274. **Umbels simple.**

Small glabrous herb, somewhat creeping; leaves linear-cylindrical, undivided, rather succulent; stamens and pistils in the same flowers; oil-ducts of the fruit present.
Crantzia. 1213

Umbels compound.

Glabrous, odorous and perennial herbs; leaves rigid; staminate and pistillate flowers mostly on distinct plants; ridglets of the fruit acutely prominent, those of the inner margin sometimes expanded into a narrow membrane. Figure 63. **Aciphylla.** 1214

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275. Umbels simple... 276

Umbels compound 280

276. Fruitlets dorsally compressed.

Small perennial herbs; leaves all basal; umbel-stalk elongated; fruitlets from dorsal impression almost hollowed in a direction contrary to the styles, narrowly connate; ridglets (vittae) smooth; oil-ducts absent or rudimentary. **Huanaca.** 1215

Fruitlets laterally compressed or turgid 277

277. Calyx usually with five terminal lobes or denticles.

Perennial herbs, not rarely tufted; apex of petals straight; fruit turgid, the fruitlets often only narrowly coherent; oil-ducts of fruit present. **Azorella.** 1216

Corolla usually without any conspicuous terminal lobes or denticles 278

278. Oil-ducts of fruit present.

Perennial herbs; leaves simply or doubly pinnatisected, the segments very small and mostly incised; fruitlets broadly coherent; ridglets smooth. **Oreomyrrhis.** 1218

Oil-ducts of fruit absent 279

279. Involucral bracts few or absent.

... Annual or perennial herbs, never tall; leaves mostly scattered or basal; stipules present, upwards free or quite adnate; flowerstalks often abbreviated; flowers often only partially fruit-bearing; petals usually contiguous before expansion, their apex straight; fruits often only moderately compressed, both fruitlets alike and smooth. **Hydrocotyle.** 1219

Involucral bracts many, towards the base connate.

Annual or perennial herbs, not rarely tall; leaves mostly basal; stipules absent; flowerstalks often elongated; petals overlapping before expansion, apex of petals straight; fruit often almost flat or much compressed, usually rough, narrowly and shortly coherent; one of the fruitlets not rarely undeveloped or dissimilar. **Didiscus.** 1228

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280. Fruit-ridglets almost or quite smooth 281

Fruit-ridglets very rough 285

281. Calyx without any conspicuous terminal lobes or denticles 282

Calyx with five conspicuous terminal lobes or denticles 283

282. Oil-ducts of fruit absent or rudimentary.

Herbs or shrubs; stipules absent; leaves not rarely entire and rigid, sometimes rudimentary; petals contiguous before expansion; fruit often only slightly compressed, generally somewhat rough. **Trachymene.** 1231

Oil-ducts of fruit conspicuously present.

Glabrous and odorous herbs, not rarely rather succulent; leaves lobed or simply or repeatedly dissected; umbels usually opposite to the leaves; apex of petals inflexed; fruit turgid; fruit-axis undivided; fruitlets broadly coherent. **Apium.** 1233

283. Oil-ducts of fruit absent.

Herbs or shrubs; leaves rarely entire; stipules absent; calyx-lobes often attached by a broad or dilated base; apex of petals usually much inflexed; fruit often considerably compressed and somewhat bilobed at the base, the fruitlets narrowly coherent. **Xanthosia.** 1234

Oil-ducts of fruit present 284

284. Oil-ducts few in each fruitlet.

Herbs, often glabrous; leaves simply or repeatedly dissected; apex of petals much inflexed; fruit turgid; fruitlets broadly coherent. **Seseli,** 1238

Oil-ducts many in each fruitlet.

Glabrous herbs, often tall and semiaquatic; leaves almost simply pinnate, the leaflet-like segments large and denticulated; apex of petals much inflexed; fruit slightly compressed; fruitlets narrowly coherent. **Sium.** 1239

285. Flowers compound-umbellate, supported by usually flaccid not rarely divided bracts.

Herbs, mostly annual, usually beset with hairlets; leaves pinnatisected, the segments small; calyx with five ter-

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minal lobes; petals of the outer flowers often radiatingly enlarged; apex of petals inflexed; fruit-ridglets rough from short bristlets; oil-ducts present. "Carrot."
Daucus. 1240

Flowers densely capitate or spicate, supported by usually pungent bracts.

Annual or oftener perennial herbs or seldom shrubby or even arborescent plants; color of the whole plant often bluish; lobes of leaves generally spinulescent-pointed; calyx with five terminal rigid lobes; apex of petals much inflexed; fruit turgid, papillular-rough.
Eryngium. 1241

CUCURBITACEAE.

286. Fruit many-seeded, usually smooth.

Tendrils undivided; lobes of the corolla five, entire; stamens five, one free, two and two connate; fruit never large. Figure 77.
Melothria. 1242

Fruit one-seeded, usually prickly.

Tendrils divided; lobes of the corolla five, entire; stamens all connate; pistillate flowers devoid of bracts; fruit very small.
Sycios. 1243

PASSIFLOREAE.

287. Disk usually produced into numerous whorled thread-like segments and into a circular prolongation.

Climbers or twiners, producing tendrils; leaves scattered, often lobed; flowers large; calyx-tube short; calyx-lobes petal-like; petals and stamens usually five; style three-cleft, connate with the stamens; fruit on a stalk-like extension (gynophore), succulent. "Passionflower."
Passiflora. 1244

LORANTHACEAE.

288. Staminate and pistillate flowers distinct.

Flowers minute; anthers bursting transversely; style undeveloped.
Notothixos. 1245

Stamens as well as the pistil in the same flowers.

Flowers large; anthers bursting longitudinally; style developed. Figure 66.
Loranthus. 1246

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PROTEACEAE.

289. One of the anthers perfect, two imperfect, the fourth sterile, all at first united.

Shrubs or half-shrubs; leaves constantly entire; flowers usually in short spikes, each supported by a bract; stalk of the inflorescence generally much elongated; corolla mostly bluish, its lobes often unequal; fruit indehiscent, dry, broadly obverse-conical, the terminal hairlets forming a ciliolar tuft. Figure 67. **Conospermum.** 1250

All four anthers alike and quite disunited 290

290. Fruit indehiscent 291

Fruit dehiscent 293

291. Fruit beset with soft hairlets, the uppermost of them forming a terminal ciliolar tuft.

Shrubs from dwarf to tall; leaves entire or lobed; flowers crowded head-like or cylindrically; lobes of the corolla alike and equally spreading; stigma always terminal; bracts somewhat indurating, finally deciduous; fruit dry, broadly obverse-conical. **Isopogon.** 1252

Fruit without any ciliolar tuft 292

292. Fruit dry.

Shrubs from dwarf to tall; leaves entire or lobed; flowers solitary or two or few together, each within a small involucre of few or several bracts; lobes of the corolla almost alike and equally spreading; stigma always terminal; fruit ellipsoid. **Adenanthos.** 1253

Fruit outside succulent.

Shrubs or half-shrubs, rarely trees; leaves always entire; corolla constantly yellow, its lobes alike and equally spreading; flowers solitary and axillary or forming short racemes, unprovided with involucral bracts; stamens inserted near the middle of the petals. Figure 68. **Persoonia.** 1254

293. Fruit-valves almost crustaceous 294

Fruit-valves almost ligneous 297

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294. Inflorescence surrounded by an involucre of large bracts.

Shrubs or small trees; leaves entire or somewhat indented; flowers large, headlike-crowded; lobes of the corolla unilaterally revolute; stigma lateral; fruit rather large, many-seeded; seeds terminated by a large membranous appendage. "Waratah." Figure 72. **Telopea.** 1264

One small bract for every two flowers 295

295. Seeds several in each fruit.

Shrubs, sometimes trees even tall; leaves denticulated or lobed; flowers in racemes; lobes of the corolla unilaterally revolute; seeds terminated by a large membranous appendage. **Lomatia.** 1265

Seeds two in each fruit 296

296. Seeds terminated by a large pale membrane.

Shrubs, much less frequently trees; leaves entire or lobed; flowers forming spikes; lobes of the corolla alike and equally spreading. Figure 69. **Orites.** 1267

Seeds devoid of any large terminal membrane.

Shrubs from dwarf to tall, less frequently trees; leaves entire or lobed; flowers often in racemes, not rarely in umbel-like fascicles, seldom only in separate-axillary pairs; lobes of the corolla usually unilaterally revolute; stigma oftener lateral than terminal; seeds brown or rather pale, their marginal membrane usually narrow, pale and extending equally around or absent. Figure 70. **Grevillea.** 1268

297. Fruits distinct.

Shrubs from dwarf to tall, rarely trees; leaves entire or lobed; flowers often axillary and forming umbel-like fascicles, rarely in racemes; lobes of the corolla usually unilaterally revolute; stigma often terminal; fruit two-seeded; seeds usually black and terminated by a large somewhat black membrane. Figure 71. **Hakea.** 1286

Fruits crowded headlike or oftener cylindrically.

Shrubs or trees; leaves entire or indented; lobes of the corolla long-coherent at the summit; style curved at first or permanently, wiry, early protruding; stigma always terminal; each fruit of the almost strobilaceous mass two-seeded, the seeds separated by a spurious upwards bilaminated finally deciduous dissepiment. Figure 73. **Banksia.** 1297

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SANTALACEAE.

298. Fruit beyond its base free from the calyx.

Shrubs or trees; leaves usually scattered and often minute; flowers extremely small; fruit dry; stalklet succulent, berry-like. Figure 65. **Exocarpos.** 1301

Fruit high-adnate to the calyx 299

299. Leaves comparatively large, usually opposite.

Shrubs or small seldom large trees; flowers rather large, corolla generally four-lobed; the lobes high-colored inside; anthers opening by longitudinal slits; fruit comparatively large, outside often succulent, inside of bony hardness. **Santalum.** 1306

Leaves small or minute, scattered 300

300. Anthers opening by longitudinal slits 301

Anthers opening by terminal slits 302

301. Stamens and pistil usually within the same flowers.

Herbs or half shrubs, not rarely of a pale or yellowish hue, parasitic on the roots of other plants; leaves scattered or some basal, always small and often narrow, seldom rudimentary; flowers minute; calyx-tube extended beyond the fruit, usually five-lobed; fruit minute, dry. **Thesium.** 1308

Stamens and pistil usually in separate flowers on distinct plants.

Leafless shrub; flowers minute, those bearing pistils solitarily scattered; fruit succulent. **Omphacomeria.** 1309

302. Each flower supported by two or three or four bracts.

Shrubs; leaves rudimentary or absent; flowers minute; lobes of the corolla five, alternating with denticular rudiments of calyx-lobes; anthers four-lobed; fruit rather small, dry. Figure 64. **Choretrum.** 1310

Each flower supported by one bract.

Shrubs; leaves rudimentary or absent; flowers minute; lobes of the corolla four or five; anthers two-lobed; fruit rather small, often succulent. **Leptomeria.** 1313

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RUBIACEAE.

303. **Fruits connate**... 304

Fruits distinct... 306

304. **Fruits succulent.**
Shrubs or woody climbers or trees; lobes of the corolla usually five, contiguous before expansion; stigmas generally elongated; fruits connate into a globular mass.
Morinda. 1314

Fruits dry 305

305. **Fruit-masses irregularly crowded into headlets.**
Herbs; leaves opposite; odor very unpleasant; stigmas elongated; fruit-masses opening by a lid.
Opercularia. 1315

Fruit-masses and their stalks forming umbels.
Herb; leaves opposite; stigmas elongated; fruit-masses bellshaped-obconical, opening by a lid. **Pomax.** 1319

306. **Fruits succulent.**
Shrubs, sometimes diminutive or dwarf herbs; leaves opposite; flowers in clusters or solitary; stamens and pistils often in separate flowers; stigmas elongated.
Coprosma. 1320

Fruits dry 307

307. **Corolla of the staminate or of all flowers with a well developed tube.**
Weak herbs; leaves generally whorled, rarely opposite; stigmas minute; fruit small, bilobed, indehiscent. Figure 75. **Asperula.** 1325

Corolla constantly without any conspicuous tube.
Weak herbs; leaves whorled; stigmas minute; fruit small, bilobed, indehiscent. **Galium.** 1326

CAPRIFOLIACEAE.

308. **Corolla equally three- to five-lobed, its tube short.**
Herbs or shrubs; leaves opposite, pinnate; flowers in compound corymbous or cymous bunches; stamens three to five; stigmas three, sessile; fruit small, succulent. "Elder." Figure 76. **Sambucus.** 1327

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COMPOSITAE.

309. Corollas of all the flowers from a tubular base flatly expanded (ligulate). (Also many immigrated weeds.)

Herbs with somewhat tuberous roots; leaves all basal, denticulated or lobed; headlet of flowers singly terminal; involucre rather large, but comparatively narrow; corollas all yellow; pappus-bristlets flattened, much pointed. **Microseris.** 1328

Corollas of all the flowers tubular to near the summit, or corollas of the marginal flowers from a tubular base flatly expanded (ligulate), forming a corollar, not an involucral, ray to the flower-headlet, the rest of the flowers tubular to near the summit 310

310. Fruit very inequilateral, almost dimidiated.

Perennial herb, never large; leaves basal, broad, indented or incised; involucral bracts in more than two rows; marginal flowers uniseriate, their corollas from a tubular base flatly expanded; corollas of the rest of the flowers tubular to near the summit, of all flowers yellow; pappus absent or its bristlets abbreviated. **Cymbonotus.** 1329

Fruit almost or quite equilateral 311

311. Leaves all or mostly opposite. (Exception: Glossogyne partly) 312

Leaves scattered or basal 316

312. Corollas of all the flowers tubular to near the summit.

Herbs, mostly annual; leaves rather or quite broad, indented; flower-headlets small, paniculated; involucral bracts herbaceous; pappus-bristlets three to five, hair-like, rigid, glandular-tipped. **Adenostemma.** 1330

Corollas of the marginal flowers from a tubular base flatly expanded, the rest of the flowers tubular to near the summit 313

313. Pappus consisting of spinules 314

Pappus absent or rudimentary 315

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314. Marginal flowers bearing imperfect fruits.

Herbs; leaves broad, indented or incised or pinnatisected; involucral bracts nearly herbaceous, broadish, in about two rows; very small bracts between all the flowers; marginal flowers uniseriate, their corollas forming a yellowish or whitish ray; pappus consisting of two to four rough spinules. **Bidens.** 1331

Marginal flowers also bearing perfect fruits.

Herbs; leaves mostly basal, often dissected; involucral bracts nearly herbaceous, narrow, in about two rows; marginal flowers uniseriate, forming a yellowish ray; very small bracts between all the flowers; pappus consisting of two rough spinules. **Glossogyne.** 1332

315. Involucral bracts almost equal.

Leaves rather broad; involucral bracts nearly herbaceous, in about two rows; marginal flowers uniseriate; very small bracts between all the flowers. (Transferable to Wedelia.) Figure 87. **Eclipta.** 1333

Involucral bracts very unequal.

Leaves rather broad; involucral bracts almost herbaceous, in about two rows, the outer narrow-spatular, the inner nearly ovate; marginal flowers uniseriate; very small bracts between all the flowers. **Siegesbeckia.** 1334

316. Corollas all purplish. (Also those of some Asters) ... 317

Corollas all or some yellowish 319

317. Bracts between the flowers present.

Rather tall but not woody plants; leaves scattered, some basal, usually pinnate-lobed; headlet of flowers large, singly terminal; involucral bracts in several rows, almost scarious, orbicular and jagged towards the summit; bristlet-like bracts copious between the flowers; corollas all tubular to near the summit; pappus-bristlets slightly plumous. (Centaurea partly). **Leuzea.** 1335

Bracts between the flowers absent 318

318. Flowers within each involucre all of one form.

Herbs or shrubs; leaves scattered; headlets of flowers small, almost paniculated; involucral bracts in several rows; corollas all tubular to near the summit; pappus-bristlets in two rows, the outer minute. **Vernonia.** 1336

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Flowers within each involucre of two forms.

Shrubs or half-shrubs; leaves scattered; involucral bracts almost herbaceous, in several rows; central flowers within each headlet with less slender corollas than those of the marginal flowers, also less fertile, or both kinds of flowers sometimes in distinct headlets; corollas all tubular to near the summit; pappus-bristlets in one row. **Pluchea.** 1337

319. **Involucral bracts in more than one row** 320

Involucral bracts in one row 361

320. **Corollas of the marginal flowers from a tubular base flatly expanded.** (Also Podolepis partly) 321

Corollas of all the flowers tubular to near the summit 327

321. **Pappus elongated** 322

Pappus abbreviated or absent 326

322. **Pappus consisting partly or wholly of spinules.**

Herbs; leaves basal and often also scattered, seldom dissected; involucral bracts almost herbaceous; ligulate flowers uniseriate, their corollas forming a bluish or whitish or yellowish ray; pappus consisting of two or often more spinules, with or oftener without intervening scale-like segments; fruits angular. Figure 80.

Calotis. 1338

Pappus consisting of hair-like bristlets or partly of bristlets and partly of scale-like segments 323

323. **Pappus consisting partly of bristlets and partly of scale-like segments.**

Herbs or somewhat shrubby plants; leaves scattered, always narrow; involucral bracts almost herbaceous, narrow, in few rows; ligulate flowers pluriseriate, their corollas forming a whitish or bluish or less frequently a yellowish ray; fertile fruits compressed, circumferential; scale-like segments of the pappus often only rudimentary. Figure 79.

Minuria. 1348

Pappus consisting of hair-like bristlets exclusively ... 324

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324. Involucral bracts in about two rows of nearly equal length.

Usually herbaceous plants; leaves scattered, some basal; marginal flowers pluriseriate, their corollas narrowly expanding and forming a bluish or whitish ray; fruits much compressed; bristlets of pappus in one or two rows, the outer often much shortened. **Erigeron.** 1351

Involucral bracts in more than two rows, unequal in length 325

325. Marginal ligulate flowers mostly pluriseriate.

Half-shrubs or small shrubs, flowering in an early and then herbaceous state; leaves scattered; rows of involucral bracts few or several; corollas of the marginal flowers forming a whitish or bluish ray; fruits much compressed; bristlets of pappus usually in more than two rows. **Vittadinia.** 1353

Marginal ligulate flowers mostly uniseriate.

Herbs, shrubs or seldom trees; leaves scattered, rarely opposite or clustered; rows of involucral bracts few or several; corollas of the marginal flowers forming a whitish or bluish ray; fruits cylindrical or variously compressed; bristlets of pappus in one or two rows, the outer much shortened. Figure 81. **Aster.** 1354

326. Fruits truncated.

Herbs, never very tall; involucral bracts of nearly equal height (length) in about two rows; no bracts between the flowers; ligulate flowers uniseriate; pappus very short or obliterated. **Brachycome.** 1383

Fruits terminated by a cylindric prolongation.

Herbs, never very tall; leaves conspicuously indented; involucral bracts unequal, in few or several rows; ligulate flowers uniseriate; fruits of the central flowers remaining undeveloped. **Lagenophora.** 1406

327. Flower-headlets distinct, without a general receptacle 328

Flower-headlets crowded into a dense cluster on a general receptacle 351

328. Involucral bracts herbaceous 329

Involucral bracts scarious 337

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329. Pappus absent or rudimentary 330

Pappus present and perfect 334

330. Leaves basal or tufted 331

Leaves scattered 332

331. Stigmas somewhat elongated, pointed.

Small herbs; leaves slightly indented; involucral bracts almost equal, in about two rows; marginal flowers pluriseriate, their corollas unexpanding; fruits hardly attenuated at the apex, those of the central flowers remaining undeveloped. Figure 78.

(Lagenophora partly.) **Solenogyne.** 1407

Stigmas much abbreviated, blunt.

Small creeping or tufted alpine herbs; leaves entire, often short; flower-headlets often sessile; involucral bracts in two or three rows; fruit quadrangular. Figure 89.

Abrotanella. 1408

332. Corollas of marginal flowers absent or rudimentary.

Small herbs; flower-headlets very often small, always stalked; involucral bracts in about two rows; fruit compressed. **Cotula.** 1409

Corolla of marginal flowers present and perfect ... 333

333. Involucral bracts in about two rows.

Small herbs; leaves denticulated; flower-headlets very often axillary, nearly or quite sessile, small; corollas of the marginal flowers minute; fruits triangular or quadrangular. Figure 88. **Centipeda.** 1414

Involucral bracts in more than two rows.

Small herbs; leaves denticulated; flower-headlets small, axillary, or a few together terminal, sessile or short-stalked; fruits pluriangular. Figure 82. **Epaltes.** 1416

334. Pappus consisting of scales.

Small annual herb; leaves very narrow, entire; flower-headlets singly terminal; involucral bracts almost biseriate, slightly scarious; pappus-scales narrow-lanceolar.

Elachanthus. 1417

Pappus consisting of bristlets 335

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335. Staminate and pistillate flowers on distinct plants; pappus on staminate flowers only.

Rather small herb; leaves narrowly lanceolar-elliptical, denticulated; flower-headlets small, somewhat crowded in panicles. **Ethuliopsis.** 1418

Staminate and pistillate flowers on the same plant and within the same involucre; pappus on all the flowers 336

336. Pappus-bristlets plumous, dilated.

Annual herbs; leaves narrow, entire; flower-headlets elongated; fruits on very short stalklets. (Podotheca). **Podosperma.** 1419

Pappus-bristlets simply hair-like.

Herbs or half-shrubs; leaves entire; involucral bracts narrow; flower-headlets terminal. **Ixiolaena.** 1420

337. Corollas of the marginal flowers much enlarged, sometimes ligulate.

Erect herbs; leaves entire; marginal flowers uniseriate, their corollas forming a yellowish rarely purplish or whitish ray; fruit equally cylindrical; pappus consisting of hair-like bristlets. **Podolepis.** 1421

Corollas of the marginal flowers equal to the others or narrower 338

338. Bracts between the flowers 339

No bracts between the flowers 341

339. Pappus conspicuous, consisting of hair-like bristlets.

Shrubs, seldom herbs; leaves entire; involucral bracts in several rows, often small, all appressed; flower-headlets small. Figure 84. **Cassinia.** 1427

Pappus rudimentary or absent 340

340. Pappus none.

Viscid, shrubby plant; leaves narrow, entire, somewhat decurrent; headlets of flowers crowded; involucral bracts in several rows, rather broad, sticky, the upper from their white expansion forming a ray. **Ixodia.** 1431

... ...

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Pappus consisting of a circular somewhat denticulated membrane.

Herbaceous plants, beset with a whitish tomentum of hair-lets; leaves rather broadish, entire, much decurrent; headlets of flowers singly terminating the stem or branches; involucral bracts in several rows, rather broad, dry, the upper often from their white expansion forming a ray. **Ammobium.** 1432

341. Pappus consisting of hair-like or plumous bristlets ... 342

Pappus consisting of scale-like segments or absent ... 349

342. Pappus-bristlets plumous 343

Pappus-bristlets hair-like 344

343. Involucral bracts very narrow, hair-like pointed.

Herbaceous or somewhat shrubby plants; leaves entire; flower-headlets on long stalks. **Athrixia.** 1433

Involucral bracts rather or quite broad.

Herbs or half-shrubs, seldom shrubs; leaves entire; involucral bracts dry and transparent or shining, in several rows, often some rather petal-like. **Helipterum.** 1434

344. Flower-headlets of one kind 345

Flower-headlets of two kinds and on distincts plants 348

345. Inner involucral bracts usually petal-like, spreading ... 346

All involucral bracts usually scale-like, appressed ... 347

346. Fruits truncated or hardly attenuated towards the summit.

From small herbs to tall shrubs; leaves broad or narrow, entire; involucral bracts in several rows; often some rather petal-like. **Helichrysum.** 1445

Fruits narrowly attenuated towards the summit.

Herbaceous plants, mostly annual; leaves always narrow, entire; involucral bracts in several rows, often some petal-like; flower-headlets rather large; pappus-bristlets (in the Victorian species) rough. **Waitzia.** 1465

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347. Marginal flowers with very slender corolla few; fruits pointed.

Herbs, mostly perennial; leaves narrow, entire; flower-headlets on long stalks; involucral bracts in many rows; fruits narrowly attenuated towards the summit; pappus-bristlets hair-like, rough or somewhat plumous.
Leptorrhynchos. 1466

Marginal flowers with very slender corolla numerous; fruits blunt.

Always herbaceous plants; leaves scattered or at the root crowded, entire; headlets never large; pappus-bristlets uniseriate. **Gnaphalium.** 1472

348. Headlets with staminate flowers and headlets with fertile pistillate flowers on distinct plants.

Herbs, often tufted; leaves entire; flower-headlets often crowded; staminate and pistillate flowers entirely in distinct headlets; bristlets of the pappus thickened at the apex. **Antennaria.** 1476

Staminate flowers prevailing in the one kind of headlets, fertile pistillate flowers predominating in the other.

Herbs, often tufted; leaves entire; uppermost involucral bracts forming a short ray. Figure 83.
Leontopodium. 1477

349. Upper involucral bracts much pointed and recurved at the summit.

Small annual herb; leaves roundish, conspicuously stalked, entire; flower-headlets crowded amongst floral leaves; involucral bracts in a few rows; pappus absent.
Stuartina. 1478

Involucral bracts all appressed or slightly spreading ... 350

350. Pappus consisting of scale-like segments.

Small herbs; leaves scattered, entire; flower-headlets terminal, solitary or crowded. **Rutidosis.** 1479

Pappus absent.

Shrubby or herbaceous plants; leaves scattered, entire; involucral bracts in several rows; flower-headlets paniculated. Figure 85. **Humea.** 1482

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351. Universal involucre absent or much reduced 352

Universal involucre conspicuous 356

352. Pappus consisting of plumous bristlets.

Almost herbaceous or shrubby plants; leaves scattered or opposite, narrow, entire; no bracts between the flowers.
Calocephalus. 1484

Pappus absent or rudimentary or consisting of dilated hairlets or of scale-like segments 353

353. General receptacle of inflorescence elongated.

Small herbs; leaves mostly scattered, entire, narrow; ultimate involucres compressed, each consisting of very few bracts; no bracts between the flowers.
Angianthus. 1487

General receptacle of inflorescence depressed or abbreviated 354

354. Ultimate flower-headlets much compressed.

Herbaceous plants, generally small, rarely shrubs; leaves scattered or crowded, entire; bracts of the ultimate involucres few; no bracts between the flowers.
Skirrophorus. 1491

Ultimate flower-headlets hardly compressed 355

355. Ultimate flower-headlets with one or two or very few flowers.

Small herbs; leaves scattered, entire; bracts forming the ultimate involucres several, the inner broader and fugacious. **Gnephosis.** 1492

Ultimate flower-headlets with many flowers.

Small annual herb; leaves narrow, entire; flower-headlets involved in woolly hairlets. **Eriochlamys.** 1493

356. Pappus rudimentary or absent 357

Pappus conspicuous 359

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357. Bracts between the flowers.

Small, annual herb; leaves entire; clusters of flower-headlets mostly radical. **Chthonocephalus.** 1494

No bracts between the flowers 358

358. Ultimate headlets one-flowered.

Small, annual herb; leaves mostly radical, upwards very narrow, entire, broadly clasping at the base; clusters of flower-headlets almost radical. **Hyalolepis.** 1495

Ultimate headlets many-flowered.

Small, annual, glabrous herb; leaves basal, upwards very narrow; flower-headlets radical, surrounded by very narrow leaves; involucral bracts almost biseriate, partly herbaceous; pappus of perfect fruits consisting of scales. **Isoetopsis.** 1496

359. General receptacle depressed or abbreviated.

Small, annual herb; leaves scattered, entire, the uppermost crowded around the clusters of flower-headlets; bracts surrounding the clusters of flower-headlets few, foliaceous; pappus consisting of five elastic and plumous bristlets. **Gnaphalodes.** 1497

General receptacle elongated 360

360. No bracts between the flowers.

Rather tall herbaceous plant; leaves entire, scattered; bracts surrounding the clusters of flower-headlets numerous, their large white appendages forming rays. Figure 86. (Myriocephalus partly.) **Polycalymma.** 1498

Bracts between the flowers.

Herbaceous plants, never dwarf; leaves scattered or near the root crowded, entire; universal involucre much exceeded by the flower-headlets; pappus consisting of plumous bristlets. **Craspedia.** 1499

361. Pappus absent.

Minute annuals; leaves scattered, entire; involucral bracts almost herbaceous; flowers few in each headlet; fruits attenuated towards the summit. **Toxanthus.** 1502

Pappus present 362

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362. Pappus-bristlets ciliated or plumous.

Small annual herbs; leaves scattered, narrow, entire; involucral bracts almost herbaceous, of nearly equal height (length); flower-headlets small, terminal; fruits very narrowly attenuated towards the summit. **Millotia.** 1503

Pappus-bristlets hair-like, almost smooth 363

363. Corollas of the marginal flowers thinner than those of the central flowers, never flatly expanding.

Herbs, usually rather tall; leaves scattered or near the root crowded; marginal flowers without stamens, exceedingly thin. **Erechtites.** 1504

Corollas of the marginal flowers alike to those of the central flowers or flatly expanding.

Herbs, less commonly shrubs, rarely small trees; leaves scattered or near the root crowded; flower-headlets terminal, seldom axillary; marginal flowers often forming a ray. Figure 90. **Senecio.** 1507

CANDOLLEACEAE.

364. Connected stamens and style folded back when quiescent, arising suddenly and becoming straight on being touched; minute fifth corolla-lobe immovable.

Annual or perennial herbs; leaves very seldom denticulated, never lobed; color of corolla various, seldom blue. Figure 92. (Stylidium.) **Candollea.** 1521

Connected stamens and style erect, immovable; minute fifth corolla-lobe reflected when quiescent, arising suddenly on touch.

Annual herbs, generally minute; leaves entire; corolla often white. Figure 93. **Leeuwenhoekia.** 1525

CAMPANULACEAE.

365. Lobes of the corolla equal.

Usually herbs, with whitish sap; anthers disconnected; corolla often blue. "Bell-flower." **Wahlenbergia.** 1526

Lobes of the corolla unequal 366

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366. Tube of the corolla entire.

Always herbs, with whitish acrid sap; anthers connected; corolla often blue. **Isotoma.** 1527

Tube of the corolla slit unilaterally.

Usually herbs, with whitish acrid sap; anthers connected; corolla often blue. Figure 91. **Lobelia.** 1528

GOODENIACEAE.

367. Tube of the corolla entire.

Herb; flowers headlike-crowded; corolla blue; lobes of the corolla without expanding membranes; anthers connate; fruit dry, minute, free from the enclosing calyx-tube, indehiscent. **Brunonia.** 1539

Tube of the corolla unilaterally slit 368

368. Anthers connate.

Herbs or small shrubs; calyx small-lobed or lobeless; corolla often blue, its lobes provided with expanding membranes; fruit dry, indehiscent. **Dampiera.** 1540

Anthers disconnected 369

369. Fruit beyond its base free from the calyx.

Herbs or seldom half-shrubs; calyx usually divided into sepals; corolla often yellow; lobes of the corolla provided with expanding membranes; fruit dry, dehiscent. Figure 95. **Velleya.** 1544

Fruit completely connate with the calyx 370

370. Lobes of the corolla unprovided with expanding membranes.

Succulent herb; corolla somewhat whitish or slightly purplish; calyx lobed; corolla-lobes unilateral; fruit succulent, hardly dehiscent, few-seeded. **Selliera.** 1546

Lobes of the corolla provided with expanding membranes 371

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371. Fruit indehiscent.

Herbs or shrubs; corolla often blue; calyx lobed or lobeless; lobes of the corolla generally all bent downward in one set; fruit succulent or dry, usually two-seeded.
Scaevola. 1547

Fruit dehiscent.

Herbs or shrubs; corolla often yellow; calyx always lobed; lobes of the corolla generally forming an upper and lower set; fruit usually many-seeded. Figure 94.
Goodenia. 1554

GENTIANEAE.

372. Lobes of corolla with expanding membranes.

Floating or semiaquatic plants; leaves scattered or crowded, often cordate; tube of corolla wide.
Limnanthemum. 1569

Lobes of corolla without any expanding membranes ... 373

373. Anthers soon twisted.

Annual or perennial herbs; stem-leaves opposite; tube of corolla often narrow; fruit one-celled. **Erythraea.** 1571

Anthers remaining straight 374

374. Fruit two-celled.

Annual herbs; stem-leaves opposite; tube of corolla often narrow. Figure 96. **Sebaea.** 1572

Fruit one-celled.

Annual or perennial herbs; leaves generally lined by longitudinal prominent venules; stem-leaves constantly opposite; tube of corolla often wide. **Gentiana.** 1573

JASMINEAE.

375. Corolla divided into usually five or more lobes.

Usually climbers or twiners; leaves simple, trifoliolate or pinnate; flowers comparatively large, particularly fragrant; lobes of the corolla overlapping before expansion; stamens enclosed in the narrow tube of the corolla; fruit when well developed bilobed, often succulent.
Jasminum. 1574

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Corolla constantly divided into two pairs of petals.

Trees or erect shrubs; leaves always simple; flowers comparatively small; petals contiguous before expansion; fruit lobeless, often succulent. Figure 100.

Notelaea. 1575

LOGANIACEAE.

376. **Lobes of corolla constantly four.**

Always herbs, often small; leaves usually tender; corolla whitish, rarely yellow; styles two, nearly always connate at the summit. **Mitrasacme.** 1576

Lobes of corolla usually five.

Mostly shrubs; leaves usually firm; corolla whitish; style one. Figure 97. **Logania.** 1581

PLANTAGINEAE.

377. **Flowers in elongated or abbreviated spikes.**

Usually herbs; leaves often lined by prominent longitudinal venules; flowers minute; stamens and pistils generally but variously developed in all the flowers. "Rib-herb." Figure 98. **Plantago.** 1584

SOLANACEAE.

378. **Fruit succulent, indehiscent** 379

Fruit dry, longitudinally dehiscent 380

379. **Corolla with a wide tube.**

Herbs or shrubs or rarely small trees, very seldom climbers; corolla-lobes folded inward before expansion; stamens five, equal. Figure 103. **Solanum.** 1586

Corolla with a narrow tube.

Shrubs or rarely small trees, not seldom spinescent; corolla-lobes overlapping before expansion; stamens four or five, equal. **Lycium.** 1593

380. **Corolla with a narrow tube.**

Herbs or shrubs or rarely small trees; corolla-lobes folded inward before expansion; stamens five, somewhat unequal. **Nicotiana.** 1594

Corolla with a wide tube.

Shrubs or rarely small trees; corolla-lobes folded inward before expansion; stamens four, very unequal. **Anthocercis.** 1595

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PRIMULACEAE.

381. Fruit high-connate with the calyx.
Herbs or somewhat shrubby plants; leaves entire, those of the stem scattered; fruit longitudinally dehiscent.
Samolus. 1596

Fruit beyond its base free from the calyx 382

382. Fruit longitudinally dehiscent.
Herbs, mostly perennial; leaves scattered or opposite or whorled, entire. **Lysimachia.** 1597

Fruit transversely dehiscent.
Annual or perennial herbs, generally glabrous; leaves usually opposite, entire. **Anagallis.** 1598

MYRSINACEAE.

383. Leaves pervaded by pellucid dots or streaklets.
Evergreen shrubs or trees; leaves scattered; flowers small, in axillary or lateral fascicles. Figure 99. **Myrsine.** 1599

EPACRIDEAE.

384. Fruit indehiscent 385

Fruit dehiscent 387

385. Lobes of corolla overlapping before expansion.
Shrubs, seldom tall; leaves usually stalked, jointed to the branchlets and finally deciduous; outer portion of fruit (pericarp) dry or succulent, hard inner portion (putamen) entire. **Brachyloma.** 1600

Lobes of corolla contiguous before expansion... ... 386

386. Hard inner portion of fruit entire.
Half-shrubs or shrubs or rarely small trees; leaves usually stalked, jointed to the branchlets and finally deciduous; outer portion of fruit dry or succulent. Figure 110.
Styphelia. 1603

Hard inner portion of fruit separated or separable into five to ten nutlets.
Half-shrubs or shrubs or rarely small trees; leaves usually stalked, jointed to the branchlets and finally deciduous; outer portion of fruit always succulent. **Trochocarpa.** 1634

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387. Leaves usually stalked, always jointed to the branchlets and at last completely deciduous.

Half-shrubs or shrubs; leaves sessile or much oftener stalked; lobes of corolla overlapping before expansion; fruit dry. **Epacris.** 1635

Leaves clasping with unjointed decurrent and persistent base 388

388. Lobes of the corolla expanding, conspicuous.

Half-shrubs or shrubs; leaves tardily seceding by irregular supra-basal rupture; lobes of corolla contiguous before expansion; fruit dry. **Sprengelia.** 1645

Lobes of the corolla unexpanding, inconspicuous.

Shrubs or small palm-like trees; leaves tardily seceding by irregular supra-basal rupture; corolla conical, the lobes comparatively minute, almost permanently coherent; fruit dry. **Richea.** 1646

ERICACEAE.

389. Fruit enclosed in the enlarging and finally succulent calyx, bursting longitudinally.

Shrubs, often beset with rigid hairlets; leaves generally scattered; calyx five-lobed; corolla-lobes overlapping before expansion; stamens ten; anthers ending upwards in two narrow and bifid appendages. **Gaulthiera.** 1647

Fruit high-connate with the calyx, succulent, indehiscent.

Evergreen, decumbent, somewhat shrubby plant, almost glabrous; leaves carnulent; calyx five-lobed; corolla-lobes contiguous before expansion; stamens five; anthers devoid of any appendages. Figure 109. **Wittsteinia.** 1648

CONVOLVULACEAE.

390. Leaves undeveloped.

Twining, parasitical; flowers comparatively small; style divided; fruit small, bursting transversely or irregularly. **Cuscuta.** 1649

Leaves developed 391

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391. Style one.

Prostrate or twining; flowers comparatively large; stigmas two, elongated; fruit two-celled, usually four-seeded, bursting by longitudinal slits; seeds often glabrous.
Convolvulus. 1650

Styles two 392

392. Styles connate towards the base.

Prostrate or diffuse; leaves very small, entire; flowers comparatively small; stigmas globular; fruit small, one- or two-seeded. **Wilsonia.** 1652

Styles disconnected 393

393. Fruit one-celled and one-seeded.

Prostrate or diffuse, never tall; leaves very small, entire; flowers comparatively small; stigmas globular; fruit small, bursting by longitudinal slits. **Cressa.** 1654

Fruit divided into two distinct fruitlets.

Prostrate; flowers comparatively small; fruit small, each fruitlet provided with a separate style and bearing one seed. **Dichondra.** 1655

ASCLEPIADEAE.

394. Leaves undeveloped.

Stems and branches succulent, often climbing; dorsal appendages of the stamens very prominent; pollen-masses descendent; fruitlets slender. **Sarcostemma.** 1656

Leaves developed 395

395. Dorsal appendages of the stamens depressed.

Stems and branches hard, usually twining; pollen-masses ascendent, often ovate-globular; fruitlets slender.
Tylophora. 1657

Dorsal appendages of the stamens compressed ... 396

396. Fruitlets slender.

Stems and branches hard, usually twining; pollen-masses descendent, often clavate-ellipsoid. Figure 102.
Daemia. 1658

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Fruitlets turgid.

Stems and branches hard, usually twining; pollen-masses ascendent, often clavate-ellipsoid; fruitlets often large, usually only one developed. **Marsdenia.** 1659

APOCYNEAE.

397. Erect shrubs. ... ...

Leaves opposite or whorled; stamens enclosed in the corolla-tube; fruit abbreviated, when well developed consisting of two succulent indehiscent simple or jointed fruitlets. **Alyxia.** 1661

Woody twiners.

Leaves opposite; stamens exserted from the corolla-tube; fruit much elongated, longitudinally dehiscent; seeds terminated by a tuft of long hairlets. Figure 101. **Lyonsia.** 1662

ASPERIFOLIAE.

398. Style cleft into two divisions.

Tall shrubs or oftener trees; leaves comparatively large; anthers disconnected; fruit undivided, smooth, four-celled. **Ehretia.** 1663

Style undivided 399

399. Anthers longitudinally connate.

Dwarf shrubs or semiherbaceous plants; flowers comparatively large; anthers terminating in a narrow elongation; fruit seceding into two fruitlets; fruitlets smooth, two-celled and two-seeded. Figure 106. **Halgania.** 1664

Anthers entirely or nearly disconnected 400

400. Fruit seceding into two fruitlets.

Always herbs, often small; flowers in racemes, always very small; fruitlets erect, somewhat laterally fixed, wrinkled or granular-rough. **Rochelia.** 1665

Fruit seceding into four fruitlets 401

401. Fruitlets depressed.

Always herbs, often rather large; flowers in racemes; fruitlets beset with hooked minute asperities. **Cynoglossum.** 1666

Fruitlets erect 402

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402. Fruitlets beset with hooked asperities.

Always herbs, often small; flowers in racemes, always very small; fruitlets high-connate. **Lappula.** 1668

Fruitlets without any hooked asperities 403

403. Fruitlets fixed somewhat laterally.

Always herbs, often small; flowers in racemes; fruitlets usually wrinkled. **Eritrichum.** 1669

Fruitlets fixed at the base only 404

404. Scale-like appendages at the base of the corolla-lobes present.

Always herbs, often small; racemes before flowering rolled backward; stigma unenlarged; fruitlets smooth, shining. "Forget-me-not." **Myosotis.** 1670

Scale-like appendages at the base of the corolla-lobes absent.

Herbs or somewhat shrubby plants, rarely tall shrubs; flowers usually in spikes; anthers disconnected or coherent at the summit; stigma annular-enlarged; fruitlets smooth, coherent. **Heliotropium.** 1671

LABIATAE.

405. Calyx ending in five lobes or denticles 406

Calyx ending in two lobes 413

406. Lobes or denticles of the calyx unequal 407

Lobes or denticles of the calyx almost equal 409

407. Pollen-bearing stamens two.

Herbs or shrubs; leaves comparatively large; calyx producing three upper denticles or one upper lobe and two lower lobes; rudimentary stamens two or absent; often only one cell of the anthers perfect, both cells distant from each other. "Sage." **Salvia.** 1673

Pollen-bearing stamens four 408

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408. Whorls of flowers crowded into a dense broadly bracteate spike.

Perennial herbs; leaves comparatively large; calyx streaked by ten longitudinal venules, finally closed, producing three upper denticles and two lower lobes. **Brunella.** 1674

Cymous whorls of flowers often racemose or paniculate.

Herbs or half-shrubs; leaves comparatively large; calyx producing often an upper entire broad lobe and four narrow and pointed lower lobes. **Plectranthus.** 1675

409. Stamens two. ...

Perennial herbs; leaves comparatively large; flowers all in axillary whorls; calyx-lobes five, rarely four; rudimentary stamens present or absent. **Lycopus.** 1676

Stamens four 410

410. Leaves in whorls, generally rigid, always entire.

Always shrubs; leaves comparatively small; calyx streaked by usually ten longitudinal venules; anthers of the lower stamens two-celled and sterile, anthers of the upper stamens one-celled and pollen-bearing. **Westringia.** 1677

Leaves simply opposite, generally flaccid, often indented 411

411. Anthers of all four stamens with two parallel cells.

Herbs or half-shrubs, very odorous; flowers in axillary or almost spicate whorls; calyx streaked by ten longitudinal venules; tube of the corolla hardly longer than the calyx; all four anthers pollen-bearing. "Mint" or "Ment." **Mentha.** 1681

Anthers of all four stamens with two divergent but confluent cells, thus almost unilocular 412

412. Upper lobes of the corolla much abbreviated, almost or quite connate, much surpassed by the three lower lobes.

Herbs or seldom half-shrubs, generally dwarf; leaves often incised; calyx streaked by usually ten longitudinal venules; corolla long-persistent; tube of the corolla inside often annular-bearded; stamens hardly exserted; all four anthers pollen-bearing. "Bugle." **Ajuga.** 1684

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Upper lobes of the corolla rather elongated, separated by a deep fissure and verging to the three lower lobes, rendering the corolla almost unilateral.

Herbs or shrubs; leaves not rarely indented, only exceptionally whorled; upper calyx-lobes often somewhat broader than the lower; tube of the corolla usually without annular-disposed hairlets; stamens conspicuously exserted; all four anthers pollen-bearing. "Germander." **Teucrium.** 1685

413. Upper lobe of the calyx provided with a hollow protruberance.

Herbs or half-shrubs; leaves generally indented; flowers solitary or oftener two in each axil, sometimes forming spikes or racemes; calyx finally closed; calyx-lobes entire; stamens four; anthers of the two upper stamens one-celled, of the lower two-celled. **Scutellaria.** 1687

Upper lobe of the calyx without any protruberance.

Shrubs, often tall, rarely trees, though then sometimes tall; leaves oftener small than large, always simply opposite, often rigid and entire; calyx-lobes entire; stamens four; anthers all two-celled, often downwards provided with a somewhat narrow and penicillar appendage. Figure 107. **Prostanthera.** 1688

OROBANCHEAE.

414. Sepals four, usually two and two connate.

Flowers in dense bracteate spikes; upper lobe of the corolla hardly divided, lower lobes three; stamens enclosed. **Orobanche.** 1705

LENTIBULARINAE.

415. Segments of calyx two.

Floating or semiaquatic or almost terrestrial plants, with or without ample capillary ramifications; corolla yellow, pink, blue or whitish. **Utricularia.** 1706

Segments of calyx four.

Semiaquatic or almost terrestrial plants, without ample capillary ramifications; corolla pink. Figure 105. **Polypompholyx.** 1708

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GESNERIACEAE.

416. Anthers disconnected; fruit succulent.

Epiphytal herb; stamens four, all perfect; fruit beyond the base free from the calyx. **Fieldia.** 1709

SCROPHULARINAE.

417. Calyx producing conspicuous lobes or denticles ... 418

Calyx deeply divided into segments 422

418. Flowers minute 419

Flowers comparatively large 420

419. Stigma almost globular.

Small herbs, usually creeping and semiaquatic; leaves long-stalked, fascicled at the root or nodes; calyx five-lobed; stamens with pollen-bearing anthers four; anthers one-celled. **Limosella.** 1710

Stigma almost spatular.

Small creeping herbs, not rarely semiaquatic; leaves mostly opposite or some crowded, usually short-stalked; flowers solitary, axillary; calyx three- or four-lobed; stamens with pollen-bearing anthers two or four; anthers one-celled. **Glossostigma.** 1711

420. Calyx four-lobed.

Herbs, always small; leaves constantly opposite, rather or quite small, indented, seldom deeply incised; flowers in spikes; upper of the terminal portion of the corolla almost flat; stamens with pollen-bearing anthers four; stigma minute, almost entire. **Euphrasia.** 1712

Calyx five-lobed or five-denticulated 421

421. Calyx conspicuously five-lobed.

Always herbs; leaves basal or the lower opposite and the upper scattered; stamens with pollen-bearing anthers four; anther-cells contiguous; stigma bilobed. **Mazus.** 1714

Calyx five-denticulated.

Herbs or rarely shrubs; leaves constantly opposite; calyx conspicuously tubular, five-angled; stamens with pollen-bearing anthers four; anther-cells contiguous; stigma dilated. **Mimulus.** 1715

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422. Stamens with pollen-bearing anthers four.

Herbs or half-shrubs; leaves opposite or whorled; calyx-segments five; anther-cells distinct; stigma bilobed. **Stemodia.** 1717

Stamens with pollen-bearing anthers two 423

423. Tube of the corolla as long as the lobes or longer.

Always herbs; leaves constantly opposite; calyx-segments five; two stamens with pollen-bearing anthers, two rudimentary or undeveloped; stigma dilated. **Gratiola.** 1718

Tube of the corolla usually much shorter than the lobes.

Herbs or shrubs or rarely small trees; leaves nearly always opposite; calyx-segments four or five; lobes of corolla much oftener four than five; stamens never more than two; stigma undivided. Figure 104. **Veronica.** 1720

BIGNONIACEAE.

424. Calyx five-denticulated, laterally entire.

Woody climbers; leaves opposite, entire or pinnate; stamens enclosed; dissepiment fixed to the middle of the fruit-valves longitudinally; the latter finally seceding from it; seeds surrounded by a transparent membrane. **Tecoma.** 1730

VERBENACEAE.

425. Corolla four-lobed.

Small trees of saline shores subject to tidal influence; leaves firm, entire; corolla-lobes equal; stamens four; fruit comparatively large, the outer portion carnulent, splitting longitudinally; seed solitary. "Spurious Mangrove." **Avicennia.** 1731

Corolla five-lobed 426

426. Lobes very unequal.

Shrubs or semiherbaceous plants; leaves opposite, ternate or whorled, rarely scattered; corolla comparatively large, its lobes in two sets; stamens always four; fruit rather small, hard, four-celled, unseparable into fruitlets. **Chloanthes.** 1732

Corolla-lobes slightly unequal.

Herbs or somewhat shrubby plants; leaves usually opposite; flowers often small; stamens two to four; fruit quite small, separable into four fruitlets. **Verbena.** 1733

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MYOPORINAE.

427. Tube of corolla abbreviated, lobes nearly equal.

Shrubs or small trees, mostly glabrous; leaves seldom opposite; corolla white, colored-dotted. **Myoporum.** 1734

Tube of corolla elongated, lobes very unequal.

Shrubs or small trees, glabrous or beset with hairlets; leaves oftener scattered than opposite; corolla white or variously red or blue, seldom green or yellow, often dotted. Figure 108. **Eremophila.** 1741

Gymnospermae.

CONIFERAE.

428. Fruits several or many within a whorly lobed strobile.

Cypress-like shrubs or trees; leaves very minute, three or rarely four in a whorl, or seldom binate, decurrent; strobile comparatively large, its segments six, rarely four or eight, ligneous, usually arranged in an almost double whorl; fertile fruits membranously margined. "Sandarac-Cypresses." Figure 111. (Frenela.) **Callitris.** 1750

Fruits solitary on a usually succulent stalklet.

Shrubs or oftener trees; leaves often scattered and rather large; fruit never large. (Podocarpus.) **Nageia.** 1752

MONOCOTYLEDONEAE.

ORCHIDEAE.

429. Leaves undeveloped 430

Leaves developed 431

430. Calyx-lobes disconnected.

Root forming irregularly elongated tubers; flowers in a raceme, pink or dark-reddish; calyx-lobes quite similar to the lateral petals; pollen-masses two, waxy, fixed to two stipitules. **Dipodium.** 1753

Calyx-lobes turgidly connate.

Root forming irregularly a tuber; flowers in a raceme; calyx upwards outside brownish; petals whitish, the lateral two minute; pollen-masses four, each consisting of coherent particles. **Gastrodia.** 1754

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431. Epiphytal 432

Usually terrestrial 433

432. Lateral calyx-lobes broadly adnate to the united stamens and style (columna or gynostemium), forming a conspicuous basal protrusion.

Stems often turgescent, crowded and enlarging into pseudo-bulbs; flowers usually in a raceme; basal protrusion descending or almost horizontal; labellum (labial petal) generally membranous; pollen-masses free in the anther-cells, four, waxy, often two and two cohering; fruit turgid. Figure 112. **Dendrobium.** 1755

Lateral calyx-lobes somewhat adnate to the united stamens and style, without forming any conspicuous basal protrusion.

Labellum forming outwardly a thick protrusion; pollen-masses four, connate into two, waxy, fixed to a stipitule; fruit slender, elongated. **Sarcochilus.** 1756

433. Flowers turned upside down 434

Flowers erect or spreading 436

434. United stamens and style elongated.

Younger tuber distant from the older; leaves never more than one, always narrow; flowers few in a raceme or reduced to only two or rarely one; empty bract one or none; calyx-lobes and lateral petals narrow; labellum almost horizontally fixed above rarely at the lower margin to a stalklike process; united stamens and style amply dilated, petal-like; pollen powdery. **Caleya.** 1757

United stamens and style abbreviated 435

435. Leaves broadish, flat, two or few.

Root-fibres fascicular, tuberously thickened; leaves firm, long-stalked; flowers comparatively large, in a raceme; all calyx-lobes and the lateral petals narrow; labellum long, with a slight median ridge and some callosity; pollen powdery. **Cryptostylis.** 1758

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Leaf thinly cylindrical, never more than one.

Younger tuber close to the older; leaf rarely absent or diminutive; flowers often small, in a spike; upper (by reversion lower) calyx-lobe broadish or quite broad; lower (by reversion upper) two often connate; labellum callously thickened, but frequently broad-membranous towards the margin; pollen powdery; fruit very short, often very oblique. **Prasophyllum.** 1759

436. Flowers spirally arranged in a spike.

Root-fibres fascicular, tuberously thickened; stem-leaves when present narrow; flowers often small, reddish or whitish; upper calyx-lobe and petals convergent or coherent; pollen powdery. **Spiranthes.** 1768

Flowers variously but never spirally arranged ... 437

437. Labellum quite similar to the two other petals and to the calyx-lobes.

Younger tuber close to the older; well developed leaves usually one only, often narrow and elongated; empty bracts one to three; flowers in a raceme, sometimes only two or one, oftener blue than yellowish or reddish; pollen powdery. **Thelymitra.** 1769

Labellum quite dissimilar to the two other petals and to the calyx-lobes 438

438. United stamens and style abbreviated 439

United stamens and style elongated 443

439. Labellum densely beset on the surface with almost hairlike somewhat callous prolongations.

Younger tuber close to the older; leaves always narrow, usually only one well developed, one or two abbreviated or bract-like; flowers in racemes; upper calyx-lobe very concave; petals with broad base sessile; pollen powdery. **Calochilus.** 1777

Labellum without any hair-like prolongations ... 440

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440. Flowers very small.

Younger tuber distant from the older; leaves never more than one, always thinly cylindrical; flowers constantly in a spike, often greenish; upper calyx-lobe very concave; pollen powdery. **Microtis.** 1778

Flowers rather or quite large 441

441. Lateral petals comparatively large.

Younger tuber close to the older; leaves few or several, always narrow, usually channelled; flowers in a raceme or sometimes only two; upper calyx-lobe clasping towards the base, straight or spreading towards the summit; lower calyx-lobes descending, very narrow; lateral petals dilated, often yellowish; pollen powdery. **Diuris.** 1779

Lateral petals minute or very narrow 442

442. Leaves few, narrow, the upper almost bract-like.

Younger tuber close to the older; leaves usually channelled; flowers in a spike, greenish, yellowish or the labellum partly dark-purplish; upper calyx-lobe throughout very concave, towards the summit bent inward; lower calyx-lobes ascending, very narrow; lateral petals minute; pollen powdery. **Orthoceras.** 1785

Leaf one, nearly always cordate-orbicular.

Younger tube distant from the older; leaf basal, almost or quite sessile or rarely long-stalked and lanceolar, always membranous; flower singly terminal, on a very short stalk or sessile; upper calyx-lobe large, very concave; lower calyx-lobes and lateral petals very narrow and often quite short; labellum comparatively broad, downward tubular; pollen powdery. **Corysanthes.** 1786

443. Leaf one only 444

Leaves more than one 449

444. Leaf about as broad as long, very seldom elongated ... 445

Leaf always considerably longer than broad, very seldom quite abbreviated 447

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445. **Labellum papillular on the surface.**

Younger tube distant from the older; leaf basal, cordate and firm, or almost lanceolar and then not simultaneously developed with the flowers; some empty bracts on the stem; flowers one or two or when few in a raceme-like spike; united stamens and style narrow; pollen powdery. **Lyperanthus.** 1787

Labellum almost or quite smooth 446

446. **Lateral petals much shorter than the calyx-lobes.**

Younger tuber close to the older; leaf basal, almost cordate, membranous; empty bracts none; flowers one, two or few; stalklets very short or none; labellum entire, with two adnate callosities at the base; pollen powdery. **Acianthus.** 1788

Lateral petals about as long as the calyx-lobes.

Young tuber close to the older; leaf basal, cordate-orbicular, membranous; empty bracts none; flowers one or two or few; stalklets very short or none; calyx-lobes and lateral petals narrow; labellum with two adnate callosities at the base; pollen powdery. **Cyrtostylis.** 1789

447. **Labellum densely beset on its surface with minute hairlets.**

Younger tuber close to the older; leaf often basal and small, somewhat or considerably longer than broad; empty bracts none or rarely one; flowers one or two or few, seldom many; lower calyx-lobes dilated, petaloid; pollen powdery. Figure 113. **Eriochilus.** 1790

Labellum beset on its surface with stalked glandules or narrow callosities or when smooth provided with two erect basal appendages 448

448. **Labellum beset with stalked and often also seriated glandules or callosities.**

Younger tuber usually close to the older; leaf considerably or very much longer than broad; flowers one or two or few; stalklets generally conspicuous; empty bracts usually one only; calyx-lobes and lateral petals often similar to each other; united stamens and style dilated; pollen powdery. **Caladenia.** 1791

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Labellum unprovided with glands and callosities, but producing one or two elongated appendages.

Younger tuber distant from the older; leaf very much longer than broad; empty bract one; stalklets very short; flowers one or two; calyx-lobes and lateral petals much alike; labellum often downy towards the base; united stamens and style dilated; pollen powdery. **Glossodia.** 1798

449. Calyx-lobes and petals quite disconnected.

Younger tuber distant from the older; leaves always two, basal, considerably longer than broad, membranous; flower one; empty bract none; stalklet sometimes very much elongated; lower calyx-lobes narrow; surface of the labellum beset with tubercular callosities; pollen powdery. **Chiloglottis.** 1799

Upper calyx-lobe broad, somewhat arched, downward concave and connate with the lateral petals.

Younger tuber close to the older; leaves several, membranous; flowers nearly always greenish, seldom somewhat reddish or brownish; lower calyx-lobes much connate; labellum narrow, basally either protracted or appendiculated, spontaneously jerking on touch, often enclosed; pollen powdery. **Pterostylis.** 1800

HYDROCHARIDEAE.

450. Flowers large.

Freshwater-plants; leaves large, broad, all basal, often conspicuously stalked; flowers singly enclosed in a calyx-like often long stalked solitary involucre, the latter formed of connate bracteoles; calyx-lobes always three, of herbaceous texture; petals three, large; stamens and pistils in the same flowers; stamens six or more; stigmas many; fruit succulent, large; seeds very numerous. Figure 115. **Ottelia.** 1817

Flowers small 451

451. Pistillate flowers singly terminal on very long spirally twisted stalks.

Freshwater-plant; leaves all basal, much elongated, narrow, membranous; staminate and pistillate flowers distinct; the staminate flowers minute, crowded, short-stalked, with one to three stamens, the pistillate flowers within connate bracteoles; petals absent; stigmas three; ovulary one-celled; fruit narrow; seeds many. **Vallisneria.** 1818

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Pistillate flowers singly sessile 452

452. **Leaves opposite.**

Oceanic plants; leaves small; flowers between distinct bracteoles axillary; the staminate flowers distinct from the pistillate; calyx-tube of the latter very much narrowed towards the summit; petals absent; stamens three; stigmas three; fruit small; seeds many. **Halophila.** 1819

Leaves mostly in whorls.

Freshwater-plant; leaves short; flowers between connate bracteoles axillary; the staminate flowers distinct from the pistillate; calyx-tube of the latter very narrow towards the summit; petals present; stamens three to nine; stigmas usually three to six; fruit small; seeds few or many. (Hydrilla.) **Elodea.** 1820

IRIDEAE.

453. **Lobes of calyx petaloid, usually about as large as the petals.**

Root fibrous, sometimes creeping; leaves often narrow; clusters of flowers more than one; calyx-lobes blue, white or yellowish; petals usually similar to the calyx-lobes; stamens three; style shorter than the stamens; stigmas three, narrow; fruit often exserted beyond the bracts. **Sisyrinchium.** 1821

Lobes of calyx petaloid, considerably or very much larger than the petals 454

454. **Stamens three.**

Root fibrous; leaves always narrow; cluster of flowers singly terminal; general outer bract large, clasping; calyx-lobes blue, rarely yellow; petals minute; style longer than the stamens; stigmas three, broad; fruits enclosed. Figure 114. **Patersonia.** 1823

Stamens two.

Root fibrous; leaves sometimes rather broad; cluster of flowers often only one; general outer bract large, clasping; one of the calyx-lobes larger than the two other; petals somewhat shorter than the calyx-lobes and as well as these white or tinged with blue and yellow; style longer than the stamens; stigmas three, broad; fruit exserted; seeds flat. **Diplarrhena.** 1826

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AMARYLLIDEAE.

455. Stamens connate.

Bulbous plants; leaves narrow; flowering stem sometimes developed before the leaves; flowers rather small, umbellate; calyx-lobes petaloid; petals similar to the calyx-lobes; fruit rather succulent, indehiscent, usually one-seeded. **Calostemma.** 1827

Stamens disconnected 456

456. Tube of the calyx much longer than the fruit.

Bulbous lily-like plants; leaves much elongated; flowers whitish, usually very large and umbellate; calyx-lobes quite petaloid; petals similar to the calyx-lobes; stamens curved downwards; fruit somewhat succulent, tardily and irregularly ruptured; seeds few or one, often resembling small bulbs. Figure 116. **Crinum.** 1828

Tube of calyx as long as the fruit.

Bulbous plants; leaves often narrow; flowers solitary or two together or few in racemes or umbels, usually rather small; calyx-lobes semipetaloid; petals similar to the calyx-lobes, often yellow inside; fruit hardly or tardily dehiscent, small, many-seeded. **Hypoxis.** 1829

LILIACEAE.

457. Style three-cleft 458

Style undivided 465

458. Tall climbers or twiners 459

Erect or spreading plants 460

459. Flowers in umbels.

Tendrils often present; leaves broad, net-venuled; staminate and pistillate flowers on separate plants; sepals distinct; petals similar to the sepals; fruit succulent, indehiscent, one- or two-seeded. Figure 117. "Sarsaparilla." **Smilax.** 1830

Flowers in racemes.

Tendrils absent; leaves broad, net-venuled; stamens and pistils in the same flowers; sepals distinct; petals similar to the sepals; fruit succulent, indehiscent, one- or two-seeded. **Rhipogonum.** 1831

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460. All flowers provided with stamens and pistils ... 461

Staminate and pistillate flowers mostly or entirely on separate plants 463

461. Fruit succulent, indehiscent.

Erect herbs; root creeping; leaves rather broad, in two rows; flowers axillary, either solitary or two together; sepals distinct; petals similar to the sepals; fruit many-seeded, outside blue or orange-colored. **Drymophila.** 1832

Fruit dry, dehiscent 462

462. Leaves broad.

Erect or rarely spreading herbs; root fibrous; flowers terminal, solitary or few together; sepals distinct, petaloid; petals similar to the sepals, both bent inwards along the margin before expansion; fruit dehiscent between the dissepiments; seeds many, provided with an appendage. **Schelhammera.** 1833

Leaves very narrow.

Erect plant; root fascicular-fibrous; flowers in a terminal umbel; sepals distinct, petaloid; petals similar to the sepals, both bent inward along the margin before expansion; fruit dehiscent at the dissepiments. **Burchardia.** 1834

463. Root bulbous.

Small plants; leaves very narrow; flowers spicate or solitary; sepals petaloid, distinct or somewhat connate with the petals and similar to them; fruit dehiscent between the dissepiments; seeds many. Figure 118. **Wurmbea.** 1835

Root thick, producing strong fibres 464

464. Leaves rather soft, somewhat succulent.

Perennial plants, often alpine, generally beset with white silky vestiture; leaves mostly basal, rather or quite narrow; flowers crowded or in paniculate racemes; sepals distinct; petals similar; fruit succulent, indehiscent. **Astelia.** 1836

Leaves rather hard, almost dry.

Dwarf or rather tall plants, always perennial; leaves narrow, rigid; flowers usually very small; sepals and petals often connate towards the base, persistent; filaments capillary, smooth; anthers bilobed; fruit three-seeded; outer seed-membrane (testa) pale. **Xerotes.** 1837

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465. Flowers extremely numerous, sessile, crowded into a dense cylindrical spike.

Erect usually robust plants; leaves narrow, very long and rigid, comparatively thick; stamens and pistils in the same flowers; sepals glume-like, rigid; petals membranous; filaments smooth and capillary; fruit very rigid, dry, dehiscent, few-seeded. "Grasstrees."

Xanthorrhoea. 1843

Flowers provided with stalklets or when sessile dispersed or clustered 466

466. Tall climbers or twiners 467

Erect or rarely spreading plants or very seldom small twiners 468

467. Petals fringed.

Leaves broad or narrow, densely streaked from longitudinal venules; flowers mostly in fascicles; sepals distinct; filaments capillary; anthers straight; fruit succulent, tardily dehiscent. **Eustrephus.** 1844

Petals fringeless.

Leaves broad or narrow, densely streaked from longitudinal venules; flowers mostly in cymes; sepals distinct; petals similar; filaments capillary; anthers straight; fruit succulent, tardily dehiscent. **Geitonoplesium.** 1845

468. Filaments tumid or bearded 469

Filaments capillary and smooth 473

469. Filaments tumid.

Rigid plants, rather tall; root somewhat creeping; leaves long, generally basal, often rather narrow; flowers paniculated; sepals distinct, petaloid; petals similar to the sepals, with them generally blue; anthers straight, opening by pores; fruit succulent, indehiscent, often blue outside. **Dianella.** 1846

Filaments bearded 470

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470. Fruit somewhat succulent.

Rather succulent plants; leaves narrow; flowers in racemes; sepals distinct; petals similar to the sepals, with them generally yellow and remaining straight, deciduous; fruit dehiscent, lobeless, few-seeded. **Bulbine.** 1849

Fruit dry 471

471. Fruit consisting of three one-seeded indehiscent fruitlets, one or two sometimes failing.

Plants rather dwarf; root fascicular-fibrous; flowers in terminal umbels; sepals and petals rather persistent, spirally twisted after flowering. **Tricoryne.** 1850

Fruit dehiscent, lobeless, many-seeded 472

472. Anthers soon revolute.

Plants rather tall; root creeping; leaves narrow, rigid; umbels or corymbs often paniculated; sepals and petals similar to each other, persistent, both remaining almost straight; seeds much compressed. **Stypandra.** 1851

Anthers remaining straight.

Root-fibres tuberously thickened; leaves narrow, flaccid; flowers in a simple or compound raceme; petals often somewhat fringed; sepals and petals persistent, both remaining almost straight; seeds turgid, angular. **Arthropodium.** 1852

473. Petals much fringed.

Plants seldom tall; root-fibres often tuberously thickened; flowers umbellate or few together; sepals and petals rather persistent, twisted after flowering, pink or purplish; stamens bent downward, three or six, and then unequal; anthers unchanging in form; fruit dry, dehiscent, lobeless; seeds provided with an appendage. "Fringe-lilies." Figure 119. **Thysanotus.** 1855

Petals fringeless 474

474. Stems branchless or hardly branched 475

Stems well branched 478

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475. Flower solitary.

Dwarf alpine plant; root creeping; leaves narrow; flowers comparatively large; sepals petaloid; petals similar to the sepals; anthers remaining straight; fruit dry, dehiscent.
Herpolirion. 1858

Flowers several or many in the inflorescence ... 476

476. Pollen-bearing anthers three.

Leaves narrow, all basal; root fascicular-fibrous; flowers in a terminal umbel; sepals petaloid; petals similar to the sepals, pink; anthers deeply bilobed; fruit dry, dehiscent, few-seeded. **Sowerbaea.** 1859

Pollen-bearing anthers six 477

477. Fruit slightly three-lobed, few-seeded.

Plants never tall, often somewhat branched; root-fibres tuberously thickened; sepals and petals rather persistent, spirally twisted after flowering, blue or pale; fruit dry, dehiscent; seeds turgid, provided with a conspicuous appendage. **Caesia.** 1860

Fruit conspicuously three-lobed, many-seeded.

Dwarf plants; root-fibres tuberously thickened; leaves broad-linear, all basal, flaccid; flowers in a terminal simple or compound corymb; sepals and petals twisted after flowering, blue or exceptionally white; anthers at last semi-circularly curved; fruit dry, dehiscent; seeds much compressed, without any conspicuous appendage.
Chamaescilla. 1861

478. Sepals and petals spirally twisted after flowering.

Perennial rather tall plants, much branched; leaves rudimentary or early evanescent; flowers small, interruptedly spicate or dispersed; sepals and petals rather persistent, pale, disconnected; fruit dry, consisting usually of a solitary fruitlet, with one or two seeds; seeds turgid, with a conspicuous appendage. **Corynotheca.** 1862

Sepals and petals remaining straight 479

479. Sepals and petals disconnected.

Perennial dwarf plants; root-fibres thin; leaves rigid, very narrow, often tufted; flowers small, in clusters or headlets; sepals and petals similar, both persistent, almost white or pale-reddish; fruit dry, dehiscent; seeds few, without any appendage. **Bartlingia.** 1863

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Sepals and petals connate towards the base.

Harsh and ramified plants, not very tall; root-fibres thin; leaves very small, crowded on the branches, aciculate-linear; flowers singly terminal; sepals and petals similar to each other, upwards disconnected, rigid, pure-blue or violet, shining, persistent, unshriveling; anthers opening by pores; fruit dry, indehiscent, one-seeded.

Calectasia. 1864

ALISMACEAE.

480. **Fruitlets hardly pointed, narrow at the base.**

Semiaquatic herbs, usually erect; leaves basal; ovule one; fruitlets circularly arranged. **Alisma.** 1865

Fruitlets pungently pointed, broadly connate at the base.

Semiaquatic herbs, usually erect; leaves basal; ovules two or more; fruitlets circularly arranged. Figure 121.

Damasonium. 1866

PHILHYDREAE.

481. **Anther coiled.**

Rather tall plant, beset with soft hairlets; spike simple, elongated, with large bracts; ovulary imperfectly three-celled. **Philhydrum.** 1867

XYRIDEAE.

482. **Outer sepal petaloid.**

Erect mostly perennial plants; leaves basal, very narrow, often rigid; flowers capitulate or spicate; inner sepals glumaceous; lobes of the corolla yellow; style three-cleft, without basal appendages. Figure 122. **Xyris.** 1868

TYPHACEAE.

483. **Flowers crowded into dense cylindrical spikes.**

Upper spike with staminate flowers; lower spike with pistillate flowers, both solitary; bracts and sepals hairlike; fruits minute. "Reed-Mace." **Typha.** 1869

Flowers crowded into several globular clusters.

Upper clusters staminate, lower pistillate; bracts and sepals scale-like; fruits rather conspicuous, often turgid.

Sparganium. 1870

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LEMNACEAE.

494. Roots capillary.

Flower from a marginal fissure of the frond, supported by a bract; anther two-celled. **Lemna.** 1871

Rootless.

Flower from a surface-cavity of the frond, unsupported by any bract; anther one-celled. **Wolffia.** 1874

FLUVIALES.

485. Flowers in spikes or racemes or clusters 486

Flowers dispersed 490

486. Sepals present 487

Sepals absent 489

487. Fruitlets three or six.

Semiaquatic or terrestrial plants; leaves always radical and variously narrow; flowers in spikes or racemes; bracts none; stamens and pistils in the same flowers; sepals and petals each usually three, bract-like; ovularies six; perfect fruitlets six or three, rarely two or four, coherent, finally seceding, unprovided with stipites. **Triglochin.** 1875

Fruitlets four or one 488

488. Fruitlets four.

Aquatic plants; leaves along the branches, broad or variously narrow; flowers in spikes, rarely almost in headlets or clusters; sepals two and petals two, small, all bract-like; stamens and pistils each four, in the same flowers; anthers much bilobed; stigmas sessile; fruitlets very small, sessile, almost disconnected. **Potamogeton.** 1878

Fruitlet one.

Oceanic plants; leaves along the branches, elongated, narrow; flowers in spikes; sepals three, bract-like; stamens and pistils in the same flowers; stamens three or four; anthers almost sessile, much exceeded by the connective; stigmas sessile; fruitlet large, indehiscent, unprovided with a stipes. **Posidonia.** 1886

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489. Fruitlets normally four, each provided with a long thin stalk-like stipes.

Aquatic plants; leaves along the branches, always very narrow, alternating; flowers in spikes or almost headlets, or few or two, at or near the upper end of a threadlike often much elongated and spirally twisted stalk; bracts, sepals and petals absent; stamens and pistils in the same flowers; stamens two; anthers much bilobed; stigma almost sessile, undivided; fruitlets four, very small, oblique. **Ruppia.** 1887

Fruitlets spikelike arranged within the lower portion of a clasping floral leaf.

Oceanic plants; leaves along the branches, always narrow, alternating; flower-spikes unilateral; sepals and petals none; stamens and pistils in distinct flowers; stamen one; anther sessile; stigmas two, capillary; fruitlets single. "Grass-Wrack." **Zostera.** 1888

490. Fruit simple.

Aquatic plants; stem slender; leaves along the branches, constantly narrow, often opposite or whorled and denticulated; flowers solitary, axillary; stamens and pistils in distinct flowers; calyx small, somewhat tubular, very tender; stamen one; anther sessile; stigmas two to four; ovule one; fruit often connate with the calyx. **Najas.** 1889

Fruit compound 491

491. Leaves threadlike-linear.

Aquatic plants, always very slender; leaves along the branches; flowers within a clasping bract; calyx quite minute, three-lobed; stamens and pistils in distinct flowers; stamens three; anthers connate; style elongated; stigma one; fruitlets three, on short stalklets. Figure 120. (Lepilaena.) **Althenia.** 1890

Leaves often broad-linear.

Oceanic plants; leaves alternate or crowded in two rows, always narrow; flowers solitary, within the clasping base of a leaf; stamens and pistils in distinct flowers; stamens two, quite connate; anthers narrow, four-celled; united filaments elongated or abbreviated; ovularies two, disconnected; ovule one; style ending in a bifid stigma; fruitlets two, small. **Cymodocea.** 1891

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PALMAE.

492. Pistils three, disconnected.

Palms, either tall or dwarf, longeval; stem unarmed; leaf-stalks often producing spines along the margin; general bracts (spathae) large, clasping; leaves terminal, almost orbicular or fan-shaped; panicules of spikes from among the leaves; flowers very small; sepals three, disconnected; petals three, contiguous before expansion, connate at the base; stamens and pistils in the same flowers; stamens six, disconnected; one rarely more of the fruitlets developed; albument of seed laterally hollowed. "Native Fan-Palm." **Livistona.** 1892

JUNCEAE.

493. Fruit three-seeded.

Plants beset with hairlets; leaves always grass-like. **Luzula.** 1893

Fruit many-seeded.

Plants always glabrous; leaves rarely grass-like, often stem-like or absent. Figure 123. **Juncus.** 1894

ERIOCAULEAE.

494. Anthers two-celled.

Plants often small and annual; leaves nearly always basal; involucrating bracts appressed; style without appendages. **Eriocaulon.** 1905

RESTIACEAE.

495. Minute bisexual plants, mostly annual 496

Rush- or sedge-like plants, nearly always unisexual and perennial 498

496. Flowers in a depressed capitular cluster.

Cluster surrounded by several transparent bracts; floral bracts none; sepals and petals absent; stamens and pistils placed together; stamen one; anther two-celled; stigmas two or oftener three; fruit one-celled, dehiscent with three slits. **Trithuria.** 1906

Flowers in a single spikelet 497

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497. Spikelet somewhat elongated, producing biseriate floral bracts.

Sepals and petals absent; stamens and pistils placed together; stamen one; anther one-celled; stigma one; fruit one-celled, dehiscent with one slit. **Aphelia.** 1907

Spikelet abbreviated to a fascicle.

Flowers sometimes reduced to two or one; sepals and petals absent; stamens and pistils placed together; stamen one; anther one-celled; fruit one-celled, dehiscent with one slit. **Centrolepis.** 1908

498. Flowers all dispersed.

Sepals and petals present; stamens three; stigmas three; fruit three-celled, dehiscent. **Lepyrodia.** 1912

Flowers all in spikelets or the pistillate flowers solitary 499

499. Fruit two- or three-celled.

Spikelets usually in panicles; staminate and pistillate flowers in distinct spikelets; sepals and petals present; stamens three; stigmas two or three; fruit dehiscent. **Restio.** 1914

Fruit one-celled 500

500. Fruit dehiscent.

Spikelets several or many, usually in panicles; sepals and petals present; stamens generally three; stigmas three. **Leptocarpus.** 1917

Fruit indehiscent 501

501. Stigmas two or three.

Stems and branches often twisted or curled; pistillate spikelets one-flowered; sepals and petals present; stamens three. Figure 124. **Calostrophus.** 1918

Stigma one.

Stems erect, unbranched; clasping leafstalks very deciduous; spikelets often singly terminal, all with more than one flower; sepals and petals present; stamens three. **Lepidobolus.** 1919

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CYPERACEAE.

502. Fruit one only in each spikelet 503

Fruits more than one in each spikelet 511

503. Floral bracts arranged fascicularly.

Spikelets changed into fascicles and crowded into a sessile globular infra-terminal cluster; several of the involucral bracts empty; the two outermost floral bracts of each spikelet opposite, navicular; stamens six or more in each spikelet, every stamen supported by a floral bract; pistil central, solitary; stigmas two or three; fruit longitudinally streaked by several prominent lines.

Chorizandra. 1920

Floral bracts forming one or more rows 504

504. Bracts few, forming one imperfect row or reduced to two in number 505

Bracts in more than one row 506

505. Spikelet one, terminal, rarely accompanied by another.

Alpine dwarf plants, forming dense patches; leaves crowded into two rows, short, rigid, pointed; spikelets producing only one flower; bracts two or three, rarely four; sepals three and petals three, changed into scale-like organs; stamens three; style thin throughout; stigmas three. **Oreobolus.** 1921

Spikelets few or several.

Spikelets producing two flowers, one of them only pistillate; bracts usually four; sepals and petals changed into long bristlets; stamens generally two; base of style enlarged, long persistent; stigmas three.

Cyatochaete. 1922

506. Bracts in few spiral rows 507

Bracts in two straight rows 509

507. Branches mostly flexuous or revolute.

Rigid plants of restiaceous aspect; leaves only rudimentary; spikelets singly terminating the branches, producing two flowers, only one of them pistillate; bracts six or fewer; stamens three to six; base of style much enlarged, persistent; stigmas three. **Caustis.** 1923

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Branches almost straight or absent 508

508. Rudimentary sepals and petals absent.

Spikelets producing two or few flowers, usually only one fruit-bearing; stamens three to six; stigmas three, generally undivided. (Cladium.) **Gahnia.** 1925

Rudimentary sepals and petals present.

Spikelets producing two or few flowers, one only fruit-bearing; bracts several; sepals and petals minute, scale-like, firm, generally pointed; stamens usually three; stigmas always three, undivided. Figure 125.
Lepidosperma. 1938

509. Rudimentary sepals and petals abbreviated, scale-like.

Spikelet always singly terminal, producing two flowers, only one of them pistillate; stamens three; style equally thin, jointed on the fruit; stigmas three.
Lepidospora. 1952

Rudimentary sepals and petals elongated or absent ... 510

510. Rudimentary sepals and petals elongated, plumous.

Alpine plant; spikelets more than one, each producing one flower only; bracts about six; stamens three; style-base enlarged, persistent. **Carpha.** 1953

Rudimentary sepals and petals absent.

Spikelets more than one, producing one or two flowers, usually only one pistillate; bracts only three or four; stamens three or fewer; style thin throughout; stigmas always two; fruit biangular, dropping within the two upper deciduous bracts. **Kyllingia.** 1954

511. Bracts in two straight rows 512

Bracts in several spiral rows 513

512. All bracts fruit-bearing, except one or two of the lowest.

Spikelets with few, several or many flowers; stamens and pistil in each flower; stamens three or less; style thin throughout; stigmas two or three; fruit bi- or tri-angular, each dropping from its solitary bract. **Cyperus.** 1955

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Few or only two of the bracts fruit-bearing.

Spikelets nearly always more than one; floral axis (rhacheole) conspicuously flexuous; flowers usually all pistillate; empty lower bracts generally more than two; sepals and petals replaced by bristlets or absent; stamens usually three; style equally thin; stigmas three; fruits rarely reduced to one in its spikelet. **Schoenus.** 1967

513. Only one floral bract to each flower 514

Two inner either connate or disconnected bracts to each pistillate flower in addition to the ordinary floral bract 516

514. Style thin throughout.

Leaves often well developed; spikelets nearly always more than one, often lateral or infra-terminal; all flowers staminate and pistillate; usually only the lowest bract empty; stamens three or less; stigmas two or three. **Scirpus.** 1977

Base of style enlarged 515

515. Style-base continuous with the fruit, persistent.

Leaves never well developed; spikelets always singly terminal, unsupported by any floral leaf; all flowers staminate and pistillate; usually only the lowest bract empty; sepals and petals changed into bristlets, rarely absent; stamens three or less; stigmas two or three. **Heleocharis.** 1989

Style-base jointed on the fruit, finally deciduous.

Leaves nearly always well developed; spikelets generally more than one, terminal; all flowers staminate and pistillate; usually only the lowest bract empty; rudimentary sepals and petals absent; stamens three or less; stigmas two or three. **Fimbristylis.** 1992

516. Inner floral bracts two, disconnected.

Spikelets generally more than one, terminally crowded, to be regarded as spikes on assuming the inner sepal-like organs to be bracteal, not calycine; all flowers staminate and pistillate; usually only the lowest bract empty; stamens two or one; style thin throughout; stigmas two or three. **Lipocarpha.** 1995

Inner floral bract forming an utricular almost closed covering around the fruit 517

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517. **Rhacheole accessory to the fruit absent or rudimentary.**
Spikes or spikelets one or often more, sometimes abbreviated almost to clusters or headlets; staminate and pistillate flowers separate, each of the latter representing a much reduced spikelet; utricular covering calyx-like, either consisting of one clasping bract, highly connate along its edges, or formed of two bracts completely connate except at the bidenticulated summit; stamens usually three. **Carex.** 1996

Rhacheole accessory to the fruit elongated, exserted and hooked.
Spike always one, terminal; staminate and pistillate flowers separate; rhacheole bare, rigid; utricular covering as in Carex; stamens usually three. **Uncinia.** 2014

GRAMINEAE.

518. **Fruit (grain) one in each spikelet.** (Exception: Panicum, section Isachne) 519

Fruits more than one in each spikelet 546

519. **Bracts more than three** 520

Bracts three 534

520. **Spikelets jointed above the lower bracts** 521

Spikelets jointed below the lower bracts 524

521. **Two bracts between the fruit-supporting and the two lowest bracts** 522

No bracts between the fruit-supporting and the two lowest bracts 523

522. **The two bracts next to the two lowest bearing stamens.**
Odorous grasses; spikelets arranged in a panicle; bracts shining, membranous, transparent; stamens three; fruit free within its bracts, but retained by them.
Hierochloa. 2016

The two bracts next to the two lowest empty.
Spikelets arranged in a panicle or in a raceme or a spike, awnless or with one awn; bracts firm, opaque; stamens six or four or rarely two. Figure 126.
(Tetrarrhena.) **Ehrharta.** 2017

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523. Spikelets arranged in a very slender cylindrical spike.

Spikelets seated alternately in excavations of the rhachis, awnless; lowest bracts rigid; stamens three.
Lepturus. 2020

Spikelets arranged in a dense spikelike panicle.

Fruit-supporting bracts ending in nine or more somewhat plumous almost equal minute awns; keel-like prominence none; stamens usually three. **Pappophorum.** 2021

524. Spikelets provided with an awn on one or more of the flower-bearing bracts 525

Spikelets awnless or one or more awns on the lowest bracts or on the rhachis or rhacheoles 527

525. Spikelets all pistillate.

Spikelets arranged by pairs in spikelike panicles, one sessile, the other on a stalklet, all invested with long and soft hairlets; stamens three or two. **Erianthus.** 2022

Spikelets partly pistillate 526

526. One or two non-pistillate spikelets supporting one fruit-bearing spikelet.

Spikelets arranged either in a panicle or in one or more spikes; stamens three. **Andropogon.** 2023

Several non-pistillate spikelets supporting one fruit-bearing spikelet.

Spikelets fascicular-clustered, the clusters arranged in a leafy panicle or solitary; stamens three.
Anthistiria. 2031

527. Lowest bracts densely beset with long soft hairlets.

Spikelets arranged by pairs in a dense spikelike panicle; branchlets of the panicle unjointed; all bracts awnless; stamens one or two. **Imperata.** 2032

All bracts smooth or beset with very short hairlets... 528

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528. Spikelets immersed into the notches of the rhachis of a spike.

Spikelets arranged in compressed almost sessile spikes, seated by alternate pairs in excavations of the rhachis, one spikelet in each pair fertile and sessile, the other sterile with adnate stalklet; all bracts awnless and smooth; stamens three. **Hemarthria.** 2033

Spikelets emersed 529

529. Lowest bract longer than the next.

Spikelets solitary on their stalklet, arranged in a raceme-like spike; all bracts awnless; lowest bract keeled, smooth, hardened; stamens three. **Zoysia.** 2034

Lowest bract shorter than the next 530

530. Spikelets crowded into pungently foliaceous headlike-fascicular clusters.

Staminate and pistillate flowers mainly on separate plants, the staminate spikelets spicate, the pistillate spikelets solitary and accompanied by one staminate or neuter flower; rhachis elongated, spinescent; all bracts awnless; fruit-supporting bract hardened. **Spinifex.** 2035

Spikelets arranged in a spike or panicle 531

531. Spikelets surrounded by bristlets.

Spikelets generally arranged in a spike-like almost cylindrical panicle, always small, jointed above the persistent involucre; all bracts awnless, smooth; stamens three. **Setaria.** 2036

Spikelets without any surrounding bristlets 532

532. Lowest empty bract conspicuously awned.

Spikelets arranged in somewhat paniculate and unilateral clusters, always small; stamens three. **Oplismenus.** 2037

Lowest empty bract awnless 533

533. The second of the two empty bracts about as large as the third, and usually somewhat exceeding the firm fruit-supporting bract.

Spikelets arranged in a panicle or in often unilateral spikes, always small, those of some species (Isachne) producing two fruits; fruit-bearing flower accompanied by a staminate or sterile flower; stamens three. **Panicum.** 2038

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The second of the two empty bracts much larger than either the third or the tender-membranous fruit-supporting bract.

Spikelets arranged in a single cylindrical spike; the second or both the lowest bracts conspicuously ciliolated; stamens three. **Neurachne.** 2053

534. Spikelets jointed below the lowest bracts 535

Spikelets jointed above the lowest bracts 537

535. Inflorescence beset with short prickles.

Spikelets three to five together on a common jointed short stalk, and these clusters arranged in a spike; all bracts awnless; lowest bracts hardened and prickly; stamens three. **Tragus.** 2055

Inflorescence smooth or beset with soft hairlets ... 536

536. Outer bracts disconnected.

Spikelets arranged in an unilateral spike, always small; bracts often pointed; lowest bract nearly as long as the next; stalklets very callous at the summit; stamens three. **Eriochloa.** 2056

Outer bracts connate towards the base.

Spikelets arranged in a paniculate spike; covering bract absent; fruit-supporting bract pointed or short-awned; stamens three. **Alopecurus.** 2057

537. Spikelets arranged in a cluster or panicle or spike ... 538

Spikelets arranged in unitedly terminal spikes ... 545

538. Fruit soon dropping from its bracts.

Spikelets arranged in an ample or spike-like panicle, always very small; stamens three or two. **Sporobolus.** 2058

Fruit retained by its bracts 539

539. Spikelets with three or five conspicuous awns ... 540

Spikelets with one awn or almost awnless 542

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540. Spikelets with five awns.

Spikelets rather large, in a panicle; fruit-supporting bract terminated by one long and four small or minute awns; stamens three. **Pentapogon.** 2060

Spikelets with three awns 541

541. Covering bract longer than the fruit-supporting bract.

Spikelets quite large, in a panicle; fruit-supporting bract terminated by three awns, the middle one much elongated and twisted; stamens three. **Anisopogon.** 2061

Covering bract shorter than the fruit-supporting bract.

Spikelets generally rather large, in a spreading or contracted or sometimes raceme-like panicle; fruit-supporting bract terminated by three disunited or downward connate awns; stamens three. **Aristida.** 2062

542. Spikelets long-awned.

Panicle spreading or contracted; flowers usually rather large; awn terminal, valid; stamens generally three. (Dichelachne.) **Stipa.** 2066

Spikelets short-awned or awnless 543

543. Fruit-supporting bract terminated by three minute awns.

Panicle generally spike-like; covering bract minutely two-awned; stamens three. **Amphipogon.** 2076

Fruit-supporting bract terminated by one small awn or awnless 544

544. Awn terminal.

Panicle contracted into an headlet or a cluster; flowers small; awn from between the two minute pointed lobes of the fruit-supporting bract, very slender. **Echinopogon.** 2077

Awn dorsal or absent.

Panicle spreading or contracted, not rarely spike-like; flowers always small; awn very slender. **Agrostis.** 2078

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545. Spikelets awned.

Spikelets unilateral, biseriate; fruit-supporting bract comparatively small, terminated by a short awn and upwards succeeded by minutely awned empty bracts; stamens three. **Chloris.** 2088

Spikelets awnless.

Spikelets unilateral, biseriate; fruit-supporting bract not succeeded by any empty bracts; stamens three. **Cynodon.** 2089

546. Fruits two in each spikelet.

Panicle of spikelets spreading or spike-like; bracts all transparent and shining; fruit-supporting bract awned; stamens three; fruit free within the covering bract. **Aira.** 2090

Fruits more than two in each spikelet 547

547. Staminate and pistillate spikelets on separate plants.

Spikelets arranged in a spike, comparatively large; all bracts awnless; fruit-supporting bract rigid; stamens three; fruit free within its bract, but remaining enclosed. **Distichlis.** 2091

Staminate and pistillate flowers in the same spikelets 548

548. Spikelets regularly arranged in a spike, their sides turned to the rhachis.

Spikelets alternate, much compressed; fruit-supporting bract dorsally convex, usually awned or pointed; stamens three; fruit often adherent to the covering bract. **Agropyron.** 2092

Spikelets irregularly arranged in a spike or oftener dispersed in a panicle 549

549. Fruit permanently adnate to the covering bract ... 550

Fruit free within its bracts 551

550. Hilum of less than half the length of the fruit.

Fruit-supporting bract usually awned; stamens three; styles infra-terminal; fruit bearded at the summit. **Bromus.** 2094

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Hilum of more than half the length of the fruit.

Fruit-supporting bract dorsally convex, pointed or awned; stamens three, rarely two or one; styles terminal; fruit unbearded. **Festuca.** 2095

551. **Spikelets unilaterally arranged in unitedly terminal or rarely dispersed spikes.**

Spikelets jointed only above the outer bracts; all bracts awnless, but often pointed; fruit-supporting bract prominently keeled; stamens three. **Eleusine.** 2097

Spikelets arranged in a solitary spike or cluster or panicle 552

552. **Fruit soon dropping from its bracts.**

Spikelets usually arranged in a panicle, between the flowers imperfectly jointed; flowers much compressed; fruit-supporting bract membranous, lobeless, lined with three venules, the middle venule somewhat carinal; covering bract persistent; stamens three or two. **Eragrostis.** 2098

Fruit free, but retained by its bracts 553

553. **Spikelets awnless** 554

Spikelets awned 555

554. **Fruit-supporting bracts lobeless or slightly notched at the summit.**

Spikelets generally arranged in a panicle; flowers much compressed, often beset with hairlets at the base, seldom numerous in their spikelet; fruit-supporting bracts lined by five venules; stamens three; hilum much shorter than the fruit. **Poa.** 2104

Fruit-supporting bracts three-lobed at the summit.

Spikelets generally arranged in a panicle; fruit-supporting bracts rigid, dorsally convex, lined by three venules; stamens three. **Triodia.** 2112

555. **Fruit-supporting bracts three-awned.**

Spikelets arranged in a contracted or somewhat spreading panicle; rhacheole jointed between all the flowers; stamens three. **Triraphis.** 2113

Fruit-supporting bracts one-awned 556

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556. Clusters of spikelets spikelike-crowded.

Flowers very small; awns of the fruit-supporting bracts very short; stamen one. **Elytrophorus.** 2114

Spikelets paniculated or simply spicated 557

557. Inflorescence smooth.

Spikes solitary or oftener arranged in a panicle; fruit-supporting bracts membranous, bilobed at the summit; awn minute; stamens three. **Diplachne.** 2115

Inflorescence beset with hairlets 558

558. Fruit-supporting bracts usually bilobed and long-awned.

Spikelets arranged in a panicle or raceme; bracts firm; fruit-supporting bracts always shorter than the empty bracts, dorsally convex and often fascicularly bearded, lined by seven to nine venules; the lobes usually pointed or short-awned. (Danthoinia.) **Danthonia.** 2116

Fruit-supporting bracts entire, minutely awned.

"Reeds," often tall; spikelets arranged in an ample panicle, their rhacheoles beset with long and soft hairlets; fruit-supporting bracts transparent; stamens three.

Arundo. 2121

ACOTYLEDONEAE VASCULARES.

RHIZOSPERMAE.

559. Floating minute flat plants, much branched.

Plants often somewhat reddish; leaf-like organs in rows; fruit-masses transparent, globular, axillary, sessile. Figure 127. **Azolla.** 2122

Submersed or semiaquatic small plants ... 560

560. Fronds stalked, their four flat segments placed cross-like.

Fruit-masses hard, compressed, basal, often stalked. Figure 128. **Marsilea.** 2123

Fronds reduced to thinly cylindrical and pointed stalk-like organs, without any foliaceous expansions ... 561

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561. Creeping plants with mostly dispersed stalk-like organs.

Fruit-masses globular, small, basal, sessile, hardly transparent. **Pilularia.** 2124

Tufted plants with crowded stalk-like organs.

Fruit-masses clasped by the base of the stalk-like fronds, transparent. **Isoetes.** 2125

LYCOPODINAE.

562. **Leaf-like organs basal.**

Root tuberous ; stem very short, leafless; spore-caselets in a spike, uniform, supported by bract-like organs, longitudinally dehiscent. Figure 131. **Phylloglossum.** 2126

Leaf-like organs along the stem and branches ... 563

563. **Spore-caselets accompanied by a second form of fructifying caselets.**

Leaf-like organs minute, often in four rows, tender; spore-caselets in spikes, supported by leaf-like or bract-like organs. **Selaginella.** 2127

Spore-caselets unaccompanied by a second form of fructifying caselets 564

564. **Spore-caselets comparatively small, one-celled.**

Leaf-like organs small, often densely crowded and rather rigid ; spore-caselets longitudinally dehiscent, singly axillary or in spikes, and then supported by leaf-like or bract-like organs. Figure 130. **Lycopodium.** 2128

Spore-caselets comparatively large, usually two-celled.

Leaf-like organs relatively large, scattered, the upper bract-like and divided into two segments ; spore-caselets axillary, sessile, somewhat compressed, broad, two-lobed or exceptionally three-lobed, longitudinally dehiscent. Figure 129. **Tmesipteris.** 2133

FILICES.

565. **Spore-caselets firm, seldom very minute, almost or quite sessile, opening regularly by a slit** 566

Spore-caselets very minute, transparent, often on stalklets, ruptured irregularly 570

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566. Spore-caselets opening by a transverse slit 567

Spore-caselets opening by a longitudinal or vertical slit 568

567. Sterile frond solitary, often leaf-like, entire.

Glabrous ferns, usually quite small, rarely large and then epiphytal, never ramified; spore-caselets in an often terminal spike, biseriate, devoid of any ringlet; bracteal organs absent. **Ophioglossum.** 2134

Sterile frond solitary, divided into segments.

Glabrous ferns, usually rather small or even minute; spore-caselets in paniculated spikes, biseriate, devoid of any ringlet; bracteal organs absent. **Botrychium.** 2135

568. Spore-caselets terminated by a radiating ringlet.

Small or even minute ferns; fronds or their segments always very narrow; sterile fronds several, entire or divided into segments; fruit-masses usually on a singly terminal pinnule and reaching beyond it; pinnule beset with hairlets; spore-caselets opening by a longitudinal slit on one side. Figure 132. **Schizaea.** 2136

Spore-caselets surrounded by a transverse ringlet ... 569

569. Spore-caselets two, three or few to each frond-segment.

Ferns often tall, slender and dichotomously branched; segments of the pinnules in two rows; fruit-masses on the lower side of the frond and overreached by its segments; spore-caselets opening by a longitudinal slit. Figure 136. **Gleichenia.** 2137

Spore-caselets crowded.

Ferns either tall or big and then with thick fronds, or rather dwarf and then with transparent fronds; fruit-masses on the lower side of dilated or much contracted frond-segments, usually in large patches; spore-caselets opening by a longitudinal slit, partly surrounded by an imperfect transverse ringlet. Figure 137. (Todea.) **Osmunda.** 2140

570. Arborescent ferns with tall trunks 571

Ferns from dwarf to rather tall, but without any arborescent trunk 573

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571. Fruit-cover absent.

Ferntrees of palm-like aspect, seldom trunkless plants; fruit-masses on the under side of the frond, roundish, emanating from a prominent receptacle, devoid of any cover, but often surrounded by a rudimentary fringy membrane; spore-caselets sessile or provided with rather short stalklets, longitudinally almost surrounded by an often somewhat imperfect ringlet. Figure 138.

Alsophila. 2141

Fruit-cover present 572

572. Fruit-masses on the under side of the frond.

Ferntrees of palm-like aspect, rarely almost trunkless plants; fruit-cover usually cup-shaped, entire or at the summit lacerated; fruit-masses roundish, emanating from a prominent receptacle; spore-caselets longitudinally almost surrounded by an often somewhat imperfect ringlet. Figure 135. **Cyathea.** 2142

Fruit-masses at the margin of the frond.

Ferntrees of palm-like aspect; fruit-cover deeply bilobed, opening from its summit downward; spore-caselets longitudinally almost surrounded by an often somewhat imperfect ringlet. Figure 139. **Dicksonia.** 2143

573. Fronds usually untransparent... 574

Fronds usually transparent 586

574. Fruit-cover absent 575

Fruit-cover present 577

575. Fruit-masses at the margin of the frond below. (Also Asplenium partly.)

Ferns, seldom tall; fruit-masses minute, often confluent; a spurious cover sometimes imperfectly formed by the recurved margin of the frond; spore-caselets longitudinally almost surrounded by an often somewhat imperfect ringlet. Figures 143 and 144.

(Notochlaena.) **Cheilanthes.** 2144

Fruit-masses on the under side of the frond away from the margin 576

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576. Fruit-masses elongated, often linear.

Ferns, varying from dwarf to tall in stature; spore-caselets longitudinally almost surrounded by an imperfect ringlet. Figure 152. **Grammitis.** 2146

Fruit-masses abbreviated, often roundish.

Ferns, varying from dwarf to tall in stature, but never really arborescent; fruit-masses roundish or sometimes oval or even narrow-elliptical, some rarely almost marginal; spore-caselets usually on very conspicuous stalklets, longitudinally almost surrounded by an imperfect ringlet. Figure 151. **Polypodium.** 2147

577. Fruit-masses at the margin of the frond below ... 578

Fruit-masses on the under side of the frond away from the margin. (Exception: Lomaria partly).. ... 582

578. Fruit-cover generally abbreviated 579

Fruit-cover generally elongated 581

579. Fruit-cover formed by a recurved lobule of the frond.

Ferns, usually of conspicuous size; fruit-cover minute, scale-like, passing gradually into the margin of the frond; spore-caselets longitudinally almost surrounded by an imperfect ringlet. **Hypolepis.** 2152

Fruit-cover distinct 580

580. Fruit-cover opening outward.

Ferns, varying from dwarf to tall in stature; fruit-cover generally almost cup-shaped or tubular, entire, opening vertically; spore-caselets longitudinally almost surrounded by an often imperfect ringlet. Figure 140. **Davallia.** 2153

Fruit-cover opening inward.

Ferns, varying in size, but generally not very tall; fronds outward almost impervious to moisture, their segments without any prominent middle-venule; fruit-cover generally short and often imperfectly circular or reniform; spore-caselets attached to the inner side of the fruit-cover, longitudinally almost surrounded by an imperfect ringlet. Figure 142. **Adiantum.** 2155

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581. Fruit-cover opening outward.

Ferns, oftener dwarf than tall in stature; fruit-cover linear; spore-caselets longitudinally almost surrounded by an often somewhat imperfect ringlet. Figure 141.
Lindsaya. 2158

Fruit-cover opening inward.

Ferns, varying from small to large; fruit-cover linear; spore-caselets attached to a filiform receptacle along the base of the fruit-cover, longitudinally almost surrounded by an imperfect ringlet. Figure 145. **Pteris.** 2159

582. Fruit-masses parallel to the rhachis of the frond or its segments 583

Fruit-masses diverging from the rhachis of the frond or its segments 585

583. Some of the fronds fertile, others sterile, the latter broader.

Ferns, varying from dwarf to tall in stature; fruit-masses along the rhacheal prominence of their frond or that of any of its segments, much elongated, spreading over nearly the whole frondal under-side; fruit-cover very elongated; spore-caselets longitudinally almost surrounded by an often somewhat imperfect ringlet. Figure 146.
Lomaria. 2165

Most fronds fertile and all quite similar 584

584. Fruit-masses much elongated, always in a single row along each side of the rhacheal prominence of the frond or its segments.

Ferns, oftener tall than dwarf; cover of the fruit-masses membranous, uninterrupted, arising at a distance from the margin of the frond; fruit-cover very elongated; spore-caselets longitudinally almost surrounded by an imperfect ringlet. Figure 147. **Blechnum.** 2170

Fruit-masses somewhat elongated, in one or two rows at some distance from the rhacheal prominence of the frond or its segments.

Ferns, generally small; fruit-cover opening inward; spore-caselets longitudinally surrounded by an imperfect ringlet. Figure 148. (Doodia.) **Woodwardia.** 2171

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585. **Fruit-cover somewhat or very much elongated.**

Ferns, varying from dwarf to tall, seldom developing trunks and then imitating tree-ferns; fruit masses rarely almost marginal; fruit-cover linear, seldom narrow-elliptical; spore-caselets longitudinally almost surrounded by an often somewhat imperfect ringlet. Figure 149.
Asplenium. 2172

Fruit-cover abbreviated.

Ferns, usually of conspicuous size, seldom very small; fruit-cover from orbicular to renate, opening circularly or almost unilaterally; spore-caselets longitudinally almost surrounded by an often somewhat imperfect ringlet. Figure 150.
Aspidium. 2180

586. **Fruit-cover deeply bilobed.**

Delicate and often small ferns; receptacle generally enclosed; spore-caselets longitudinally almost surrounded by an often somewhat imperfect ringlet. Figure 134.
Hymenophyllum. 2185

Fruit-cover entire or slightly lobed.

Ferns, often delicate and dwarf; fruit-cover cup-shaped or tubular; fruit-masses on a generally exserted hair-like receptacle; spore-caselets longitudinally almost surrounded by an often somewhat imperfect ringlet. Figure 133.
Trichomanes. 2187

SPECIES OF PLANTS.

RANUNCULACEAE.

RANUNCULUS.

587. **Petals white** 588

Petals yellow 590

588. **Submerged leaves divided into numerous hair-like segments.**

Water-plant, quite glabrous except the fruit; style very short.
R. aquatilis.

Leaves divided into linear or broadish segments or lobes 589

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589. Segments of leaves linear.

Semiaquatic, alpine plant, quite dwarf; petals five to ten; styles recurved. **R. Millani.**

Segments of leaves broadish.

Terrestrial, alpine plant, rather tall; petals generally numerous and large; styles recurved. Figure 1. **R. anemoneus.**

590. Leaves quite or nearly lobeless.

Alpine plant, rather dwarf, beset with appressed hairlets; leaves nearly elliptic-cuneate; stem one-flowered; styles almost straight. **R. Muelleri.**

Leaves lobed or dissected 591

591. Styles nearly or quite straight 592

Styles recurved 593

592. Tufted.

Alpine, rather robust plant; leaves somewhat succulent, dissected into numerous narrow lobes; sepals elongated, elliptical; petals five to ten, often purplish outside. **R. Gunnianus.**

Creeping or somewhat floating.

Generally glabrous, seldom robust plant; main segments of leaves unitedly emanating from the stalk; petals five to twelve. **R. rivularis.**

593. Sepals appressed.

From dwarf to tall, much beset with hairlets; main segments of leaves somewhat pinnately arranged, incised or indented; petals usually five, comparatively large; fruitlets smooth. **R. lappaceus.**

Sepals reflexed... 594

594. Fruitlets smooth.

Rather tall plant, beset with soft hairlets; main segments of leaves unitedly emanating from the stalk, incised or indented; petals usually five. **R. hirtus.**

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Fruitlets rough.

Annual, erect plant, often beset with soft hairlets; stems leafy, weak, never tall; leaves small, much dissected; flowers mostly opposite to the leaves, sessile or short-stalked, very small; styles very short.

R. parviflorus.

MYOSURUS.

595. Style shorter than its fruitlet.

Glabrous; petals pale, either yellowish or greenish, occasionally undeveloped; stamens twenty or fewer, sometimes reduced to five. **M. minimus.**

CLEMATIS.

596. Anthers terminated by a pointed appendage.

Segments of leaves lanceolate- or cordate-oval, rather rigid, often indented; staminate and pistillate flowers mostly on separate plants; sepals pure- or yellowish-white, comparatively large. **C. aristata.**

Anthers without any appendage.

Segments of leaves linear- or oval-elliptical, rather flaccid; staminate and pistillate flowers mostly on separate plants; sepals yellowish-white; four of the outer stamens not rarely enlarged and alternating with the sepals.

C. microphylla.

CALTHA.

597. Basal lobes of the leaves inflexed upwards.

Dwarf plant; leaves small, shining, without any denticulations beyond the two lobes, cordate- or elliptical-ovate; sepals five to eight, white, linear-lanceolar.

C. introloba.

MAGNOLIACEAE.

DRIMYS.

598. Fruitlets one to four, the stigma of each decurrent.

From a dwarf shrub to a small tree, restricted to subalpine or cool forest-country; leaves from narrow-elliptical to lanceolar-ovate, narrowed into the base, not rarely of a reddish tint; umbels terminal, nearly sessile. Native "Pepper-tree." Figure 3. **D. aromatica.**

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NYMPHAEACEAE.

CABOMBA.

599. **Stamens and pistils indefinite in number.**

Leaves all oval or elliptical, centrally fixed, entire, their lower page as well as the stem and leaf- and flower-stalks mucously coated; sepals and petals purplish inside; stamens twelve to thirty-six; ovularies four to eighteen. **C. peltata.**

ANONACEAE.

EUPOMATIA.

600. **Anthers without any terminal much elongated appendage.**

Tall shrub or small tree; leaves from broad-lanceolar to almost ovate; flowers soon lateral; sterile stamens all connivent, from ovate to narrow-elliptical, greenish-yellow, turning brownish, shorter than the fertile stamens; fruit almost urnshaped. **E. laurina.**

DILLENIACEAE.

HIBBERTIA.

601. **Twining or climbing.**

Leaves large, oval, denticulated; stamens all around the pistils. **H. dentata.**

Erect, diffuse or prostrate 602

602. **Stamens placed around the pistils** 603

Stamens placed on one side of the pistils 608

603. **Leaves strongly recurved at the margin.**

Leaves very small, from narrow-elliptical to oval; flowers stalked; appendage of seeds short. **H. serpillifolia.**

Leaves almost or quite flat 604

604. **Bracts large.**

Erect or diffuse; leaves broad- or cuneate-linear, blunt, somewhat channelled; flowers sessile. **H. virgata.**

Bracts small 605

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605. Leaves narrow 606

Leaves broadish 607

606. Leaves rather long, broad-linear, pointed.

Always prostrate and nearly always glabrous; leaves somewhat channelled, very often glabrous; flowers almost sessile, rather large; stamens many; seeds usually several; appendage of seeds fringed. **H. angustifolia.**

Leaves rather short, narrow-linear.

Prostrate or oftener diffuse or erect; leaves small, somewhat channelled, often fascicled, nearly always beset with hairlets; flowers sessile, rather small; stamens several; seeds usually two. **H. fasciculata.**

607. Leaves generally indented at the summit.

Often spreading and glabrous; leaves rather small, conspicuously stalked, from spatular- to obcordate-cuneate, dark-green above; flowers almost sessile, rather small; stamens many; fruitlets one to three. **H. diffusa.**

Leaves generally entire.

Often erect and densely beset with minute hairlets; leaves flat or somewhat recurved at the margin, short-stalked, greyish-green on both sides, from elliptical- to spatular-cuneate, usually entire; flowers almost sessile, rather large; stamens several or many; fruitlets often two or three; appendage of seeds fringed. **H. obtusifolia.**

608. Flowers usually on rather long stalks 609

Flowers nearly or quite sessile ... ... (*bis.*) 610

609. Leaves recurved at the margin.

Mostly erect, sometimes tall; leaves from obovate to narrow-elliptical, at the base cuneate; seeds one to two; appendage of seeds somewhat or hardly lobed. **H. Billardieri.**

Leaves repressed at the margin 610

610. Leaves pungent.

Mostly prostrate or diffuse; leaves linear, glabrous, rigid, acute; stamens few; appendage of seeds almost lobeless. **H. acicularis.**

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Leaves blunt.

Always much beset with spreading hairlets, prostrate; leaves linear; petals only about as long as the sepals; seeds four to eight; appendage of seeds almost lobeless. Figure 2. **H. humifusa.**

610. Leaves repressed at the margin.

(*bis.*) Erect or diffuse; leaves almost linear, rather blunt; flowers scattered, often terminal, usually sessile; seeds only one or two; appendage of seeds somewhat lobed. **H. stricta.**

Leaves recurved at the margin.

Erect, never tall, always much beset with appressed hairlets; leaves from almost ovate-lanceolar to narrow-elliptical; flowers crowded at and towards the summit of the branchlets, almost sessile; outer sepals with a somewhat silky vestiture outside; appendage of seeds short, carnulent, lobeless. **H. densiflora.**

MONIMIEAE.

ATHEROSPERMA.

611. Anthers without any terminal much elongated appendage.

Finally a tree; bark aromatic; leaves opposite, from almost lanceolar to nearly ovate, but always acute, usually serrated, greyish or whitish underneath; staminate and pistillate flowers mostly on separate plants, always solitary, fragrant; bracts two, conspicuous, forming early a bivalved involucre. **A. moschatum.**

HEDYCARYA.

612. Fruitlets very small, sessile.

Finally a tree; leaves opposite, ovate-lanceolar, denticulated; racemes few-flowered; staminate and pistillate flowers on separate plants; fruitlets from pale-yellowish turning in age dark. Figure 4. **H. Cunninghami.**

MENISPERMEAE.

SARCOPETALUM.

613. Petals very carnulent.

Leaves cordate, mostly entire; staminate and pistillate flowers on separate plants; sepals and petals two to five; filaments below the free summit connate; anthers two-celled. Figure 6. **S. Harveyanum.**

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STEPHANIA.

614. Headlets of flowers umbellate.

Leaves entire, ovate- or somewhat cordate-orbicular, narrowed into an acute apex; staminate and pistillate flowers on separate plants; sepals six to ten; petals three to five; filaments quite connate; anthers one-celled.
S. hernandifolia.

LAURACEAE.

CASSYTHA.

615. Stem and branches threadlike.

Glabrous; flowers crowded; fruit ellipsoid, red or yellow, very succulent. Figure 5. **C. glabella.**

Stem and branches moderately or quite thick ... 616

616. Flowers distant in spikes.

Beset with short often brownish hairlets; stem and branches comparatively thick; fruit pear-shaped.
C. phaeolasia.

Flowers crowded 617

617. Stem and branches rather thick.

Much beset with short hairlets; fruit globular.
C. pubescens.

Stem and branches quite thick.

Glabrous, except the flowers; calyces beset with short often blackish hairlets; fruit rather large, globular, green.
C. melantha.

PAPAVERACEAE.

PAPAVER.

618. Beset with rigid spreading scattered hairlets.

Leaves incised, their lobes short and comparatively broad; petals rather small, brick-colored; filaments about half as long as the petals, upwards capillary; anthers yellowish; placentaries extending scarcely half-way to the centre of the fruit. **P. aculeatum.**

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CRUCIFERAE.

CAKILE.

619. **Flowers relatively large.**

Plant of diffuse habit, here in full growth throughout the year; leaves here either short-lobed or almost entire, generally cuneate-elliptical. **C. maritima.**

STENOPETALUM.

619. **Fruit longer than its stalklet.**

(*bis.*) Generally glabrous; leaves usually narrow, entire or linear-lobed; petals almost half exserted, dull brownish-yellow; fruits ellipsoid-cylindrical, erect. **S. lineare.**

Fruit about as long as its stalklet 620

620. **Fruit ovate-ellipsoid.**

Densely beset with very short hairlets; leaves narrow; fruits erect. **S. velutinum.**

Fruit globular.

Glabrous, often depressed; stem and branches very slender; leaves small, entire and narrow or linear-lobed; petals more than half exserted, whitish; fruits deflexed. **S. sphaerocarpum.**

MENKEA.

621. **Fruit much compressed, ovate-elliptical.**

Leaves spatular- or elliptical-cuneate; fruits shorter than their stalklets or hardly as long. **M. Australis.**

ALYSSUM.

622. **Fruit flat.**

Small, annual herb; leaves linear; petals minute, pale-colored; fruits from oval to orbicular; seeds four to six in each cell. **A. minimum.**

LEPIDIUM.

623. **Leaves very narrow, undivided** 624

Leaves mostly broadish, denticulated or variously divided 626

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624. Fruit bluntly bilobed at the summit.

Somewhat shrubby; leaves semicylindric-linear, undivided; sepals elongated; petals almost linear; fruit large, almost ovate. **L. leptopetalum.**

Fruit acutely bilobed at the summit 625

625. Petals present.

Perennial; leaves linear, carnulent; anthers purplish; fruit rather large, margined towards the summit.
L. phlebopetalum.

Petals absent.

Leaves linear, entire; stamens four; fruit almost orbicular, minutely bilobed, margined all round.
L. monoplocoides.

626. Fruit conspicuously bilobed.

Annual; stem and branches beset with minute papillules; stem-leaves broadish, indented or denticulated, bilobed at the base; petals none; stamens four; stigma sessile; fruit oval-obcordate. **L. papillosum.**

Fruit minutely bilobed 627

627. Stamens six.

Stem-leaves from wedge-shaped to oval- or linear-lanceolar, partly indented or incised; sepals and petals minute; fruit small, elliptic-oval. **L. foliosum.**

Stamens two.

Stem-leaves linear- or cuneate-lanceolar, entire or indented or incised; sepals minute; petals generally none; fruit very small, roundish-oval; its lobes very minute.
L. ruderale.

NASTURTIUM.

628. Petals about as long as the sepals, yellow.

Leaves pinnatilobed or some merely indented, the terminal lobe of the lower leaves enlarged, the other lobes somewhat elliptical or ovate; style short; seeds pale-brownish, outside closely dotted-reticular. **N. terrestre.**

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CAPSELLA.

629. Fruit nearly oval-obcordate, longer than its stalklet.

Beset with short hairlets; leaves entire or denticulated, from lanceolar to rhomboid; stalklets rather thick; seeds few in each fruit-cell. **C. pilosula.**

Fruit oval-ellipsoid, shorter than its stalklet ... 630

630. Petals almost enclosed.

Always glabrous; leaves entire, from lanceolar to nearly ovate or the upper linear; stalklets very thin; seeds rather numerous in each fruit-cell. **C. elliptica.**

Petals conspicuously exserted.

Often beset with short hairlets; leaves mostly pinnatifid or denticulated, from spatular or lanceolar to linear and hastate; sepals long-persistent; stalklets very thin; seeds several in each fruit-cell. **C. antipoda.**

CARDAMINE.

631. Leaves bilobed at the base, otherwise all only denticulated.

Usually tall; leaves sessile, elliptic-lanceolar; petals less than half exserted; style elongated; fruit several times longer than the stalklet; seeds dark-brown outside and densely reticulated. **C. stylosa.**

Leaves almost lobeless at the base, the lower pinnatisected. 632

632. Seeds reticulated outside.

Usually tall; upper leaves from lanceolar to almost linear; petals more than half exserted; style elongated; fruit often about twice as long as the stalklet; seeds black outside. **C. dictyosperma.**

Seeds smooth 633

633. Stamens six.

Generally glabrous; leaves pinnatisected, with segments from roundish to linear; seeds in one row, brown outside. (C. hirsuta.) **C. parviflora.**

Stamens four 634

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634. Style abbreviated.

Glabrous; leaves mostly basal, from lanceolar to linear, pinnatisected, with narrow segments, or some incised or only denticulated; petals little longer than the sepals; fruits distant, the lowest down to near the base of the stem, about thrice as long as their stalklets; seeds brown. **C. laciniata.**

Style elongated.

Dwarf; leaves pinnatisected, their segments from elliptical to rhomboid, mostly indented; sepals longer than the petals; fruits generally several times longer than their stalklets; seeds very minute, in two rows, brown. **C. eustylis.**

ERYSIMUM.

635. Petals yellow.

Annual, rather dwarf; leaves from lanceolar to broad-linear, indented or some entire; fruits hardly longer than their stalklets; venule of valves carinular-prominent; dissepiment lanceolar. **E. curvipes.**

Petals white or pink 636

636. Perennial.

Subalpine plant; leaves from spatulate-lanceolar to rhomboid; fruit quadrangular-ellipsoid, acute, comparatively small, about as long as the stalklet; seeds shining, dark-brown and reticulated outside. **E. capsellinum.**

Annual 637

637. Fruit hardly or slightly longer than its stalklet.

Leaves mostly lanceolar in outline, indented or pinnatifid; petals much longer than the calyx; fruits lanceolar-ellipsoid, much beset with hairlets; carinular venule of the valves faint. Figure 8. **E. lasiocarpum.**

Fruit much longer than its stalklet 638

638. Fruit lanceolar-cylindrical, few times longer than broad.

Upper leaves from lanceolar to rhomboid, indented or denticulated; lower leaves spatular in outline, pinnatilobed or incised; petals hardly longer than the calyx; fruits lanceolar-ellipsoid, several times longer than their thick stalklets, beset with very short hairlets; carinular venule of the valves faint. **E. brevipes.**

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Fruit narrow-cylindrical, many times longer than broad.

Lower leaves from lanceolar to elliptical, pinnatifid or incised, upper leaves gradually almost linear, indented or entire; flowers comparatively large; stigma ample; dissepiment of fruit elongate-linear. **E. Blennodia.**

BARBAREA.

639. Fruit slightly spreading, linear-quadrangular.

Rather tall herb; lowest leaves spatular in outline, pinnatisected, with a much enlarged terminal segment; upper leaves from spatular-ovate to cuneate-rhomboid, incised or indented; flowers crowded. **B. vulgaris.**

ARABIS.

640. Petals yellowish-white.

Rather tall herb, greyish-green; lowest leaves from almost spatular to cuneate-elliptical, incised or indented, beset with branched hairlets; upper leaves with an acutely bilobed and sessile base, from ovate- to linear-lanceolar, mostly entire, glabrous; fruits strictly erect, many times longer than their stalklets; venule of valves carinular; seeds in each fruit-cell almost biseriate, narrowly margined. **A. glabra.**

WILCKIA.

641. Stigmas narrow, decurrent along the acutely conical short style.

Annual herb; leaves almost lanceolar, indented or denticulated; calyces several times longer than their stalklets; fruit rather elongated, much beset with hairlets; longitudinal venules of valves thin. **W. Africana.**

SISYMBRIUM.

642. Petals yellow.

Annual, glabrous; leaves mostly pinnatifid, their lobes few, very narrow and entire; fruits only about as long as their slender stalklets. **S. nasturtioides.**

Petals white **643**

643. Annual.

Scantily beset with hairlets; lower leaves pinnatifid, their lobes from oblique-lanceolar to deltoid; upper leaves few, indented or entire; fruits filiform-cylindrical, about twice as long as their stalklets, or in a stemless state of this

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plant very short, rather thick and turgid, singly forming on their stalks and during maturation burying themselves in the ground; the flowers of this state very minute. (Geococcus pusillus.) **S. cardaminoides.**

Perennial 644

644. Leaves incised, the lobes broadish.

Robust, beset with short hairlets; lobes of the leaves acute; stigma rather large; fruits twice or thrice as long as their thick stalklets. **S. Lucae.**

Leaves mostly trisected, the segments very narrow.

A somewhat woody desert-plant, quite glabrous; leaves numerous, greyish-green, some undivided; petals comparatively large, nearly orbicular; fruits twice or thrice as long as their slender stalklets. **S. trisectum.**

CAPPARIDEAE.

CAPPARIS.

645. Outer sepals at first entirely connate, at last separating by irregular rupture, inner sepals petal-like.

A small desert-tree; leaves firm, from lanceolar-elliptical to almost ovate, above pale-green, particularly beneath as well as the branchlets densely beset with greyish short hairlets; flowers solitary, comparatively large; petals white, somewhat denticulated; fruit very large, globular, its outermost portion (pericarp) almost crust-like, the inner portion somewhat pulpy. Figure 7. **C. Mitchelli.**

DROSERACEAE.

DROSERA.

646. Leaves all basal 647

Leaves also along the stem 652

647. Leaves divided into two or more lobes.

Tall plant; root fibrous; leaf-lobes long and narrow; racemes two or more, constituting a cymous panicle; flowers large; styles usually three, penicillar-multifid; seeds linear-filiform. **D. binata.**

Leaves undivided 648

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648. Flower one 649

Flowers more than one 651

649. Leaves orbicular, very minute.

Minute plant; stipules scarious; leaves inserted above their base, rosulate-arranged; flower on a capillary glabrous stalk, minute; sepals, petals, stamens and styles four; seeds ovate. **D. pygmaea.**

Leaves elongated 650

650. Leaves obovate-cuneate.

Root tuber-bearing; leaves comparatively large, rosulate-arranged; flowers large; their stalks hardly longer than the leaves; styles three, penicillar-multifid; seeds nearly ovate. Figure 11. **D. Whittakeri.**

Leaves linear-elliptical.

Alpine plant; root somewhat creeping; leaves alternate but crowded; flower-stalk from hardly longer than the leaves to twice as long; styles usually three, undivided; stigmas renate; outer seed-membrane bluntly protracted. **D. Arcturi.**

651. Leaves roundish.

Dwarf plant; root fibrous; leaves rosulate-arranged, very small; racemes dense, beset with glandule-bearing hairlets; flowers small; petals crimson; stigmas three, bifid; seeds ovate-globular. **D. glanduligera.**

Leaves spatular.

Root fibrous; leaves rosulate-arranged; racemes on rather long stalks, beset with glandule-bearing hairlets; flowers small; styles three, bifid; seeds ellipsoid. **D. spatulata.**

652. Leaves very much longer than broad.

Root fibrous; leaves scattered, long-linear, acute, undivided; racemes lateral, slightly beset with glandule-bearing hairlets; styles three, bifid; seeds ovate. **D. Indica.**

Leaves about as long as broad 653

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653. Stem-leaves orbicular, fixed at their centre.

Climbing or twining plant; root tuber-bearing; leaves singly scattered or two or three together; flowers large; styles penicillar-multifid; seed-membrane bluntly expanded.
D. Menziesii.

Stem-leaves semiorbicular-crescentshaped, fixed at the base 654

654. Calyx beset with hairlets.

Erect; root tuber-bearing; leaves small, singly or ternately scattered; sepals closely appressed; styles three, penicillar-multifid; seeds ovate. **D. peltata.**

Calyx glabrous.

Erect; root tuber-bearing; leaves small, singly or ternately scattered; sepals laxly appressed; styles three, penicillar multifid; seed-membrane narrowly much expanded.
D. auriculata.

VIOLACEAE.

HYMENANTHERA.

655. Leaves mostly small, entire or bluntly denticulated.

Shrub, in the lowlands tall, in the alps dwarfed; leaves rigid, generally from elliptical- to cuneate-linear; flowers axillary, on very short stalklets, fragrant; petals yellowish; fruit small. **H. Banksii.**

HYBANTHUS.

656. Shrubby.

From rather dwarf to tall, glabrous; leaves scattered, from lanceolar- to broad-linear; flowers generally few together, on a short stalk; petals somewhat bluish. Figure 9.
H. floribundus.

Herbaceous 657

657. Flowers axillary, solitary, on short stalks.

Slender, glabrous herb; leaves all scattered, from lanceolar- to narrow-linear, entire; lower petal blue.
H. Vernoni.

Flowers racemose, the racemes on long stalks.

Slender, glabrous herb; upper leaves opposite, linear, entire; lower petal blue. **H. filiformis.**

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VIOLA.

658. Stem erect **or recumbent.**

Leaves cordate or somewhat renate; petals white.
V. Caleyana.

Stemless **or with rooting offshoots** 659

659. Leaves from **renate to cuneate-rhomboid.**

Offshoots rooting; petals mixedly white and lilac or bluish.
V. hederacea.

Leaves from **elliptical to broad-oval, with a bilobed or rounded base.**

Stemless; flowerstalks much elongated; petals violet.
V. betonicifolia.

POLYGALEAE.

POLYGALA.

660. Leaves from **roundish-ovate to lanceolar.**

Dwarf, perennial herb; leaves small, scattered, flat, their secondary venules reticulated; flowers small, in corymbous racemes; interior sepals obovate, nearly as long as the fringe-crested anterior petal and the obcordate-orbicular fruit.
P. Sibirica.

COMESPERMA.

661. Climbing **or twining.**

Leaves from lanceolar or elliptical to linear, distant; flowers generally blue; outer sepals disunited, much shorter than the inner; fruit elliptical-cuneate, attenuated into a narrow base.
C. volubile.

Erect 662

662. Flowers blue 663

Flowers pink 665

663. Fruit **broadly cuneate-obovate.**

A rigid, shrubby plant; leaves distant, minute, pungent; outer sepals disunited, about half as long as the orbicular inner sepals.
C. scoparium.

Fruit **much narrowed downwards** 664

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664. Leaves from ovate- to linear-lanceolar.

Dwarf, slender herb; outer sepals not much shorter than the inner; fruit spathular-cuneate, angular at the summit; seeds beset with curly hairlets. **C. calymega.**

Leafless or with a few narrow leaves.

Dwarf, very slender herb; outer sepals not much shorter than the inner; fruit spathular, rounded at the summit; seeds beset with straight hairlets. **C. defoliatum.**

665. Dwarf, almost herbaceous.

Leaves from elliptical- to linear-lanceolar; two of the outer sepals united, all much shorter than the inner; fruit narrowly spathular-cuneate. Figure 13. **C. polygaloides.**

Rather tall, almost shrubby 666

666. Leaves inflexed at the margin, rather broad.

Shrubby plant; leaves numerous, oval-elliptical, blunt; outer sepals disunited, much shorter than the inner; fruit short-bilobed at the summit. **C. retusum.**

Leaves reflexed at the margin, rather narrow.

Somewhat shrubby plant; leaves numerous, from elliptical- to linear-lanceolar, pointed; outer sepals disunited, much shorter than the inner; fruit truncate at the summit. **C. ericinum.**

HYPERICINAE.

HYPERICUM.

667. Fruit one-celled, three-valved.

Small, glabrous herb, from erect to almost prostrate; leaves from oval- to lanceolar-elliptical; flowers variable in size, never very large; sepals lanceolar; fruit oval-ellipsoid; placentaries narrow-linear. **H. Japonicum.**

ELATINEAE.

ELATINE.

668. Dissepiments of fruit evanescent.

Small, glabrous plant; leaves membranous, entire, from spathular- and orbicular-elliptical to lanceolar- and linear-elliptical; flowers sessile, scattered; sepals, petals, stamens, styles and fruit-valves two to four; seeds slightly curved. **E. Americana.**

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BERGIA.

669. **Stamens as many as sepals and as petals.**

Small plant, erect or oftener somewhat prostrate, beset with short hairlets; leaves firm, ovate-lanceolar, denticulated; flowers clustered, very small; floral organs from ternary to quinary; seeds ovate-ellipsoid. Figure 12.
B. ammannioides.

PITTOSPOREAE.

BILLARDIERA.

670. **Petals cohering in a long tube.**

Leaves from ovate- to linear-elliptical; flowers solitary; petals many times longer than the sepals, greenish-yellow or somewhat purplish; style very long; berry blue, one-celled, hollow. **B. longiflora.**

Petals bending together into a short tube 671

671. **Flowers mostly solitary.**

Leaves from ovate-lanceolar to broad-linear, often beset underneath with appressed hairlets; petals twice or three times as long as the sepals, greenish- or pale-yellow, sometimes purplish-tinged, pointed, towards the summit recurved; style very short; berry livid, pulpy, two-celled. **B. scandens.**

Flowers several together.

Leaves narrow- or broad-lanceolar, sometimes almost ovate, rarely orbicular, often beset underneath with appressed hairlets; petals three- or several-times longer than the sepals, greenish- or pale-yellow or violet- or purplish-tinged; style very short; berry livid, pulpy, two-celled.
B. cymosa.

CHEIRANTHERA.

672. **Petals rather large, dark-blue.**

Erect, slender plant, rather dwarf; leaves crowded, elongate-linear, acute; flowers few, rarely two or one only; stamens bent unilaterally; anthers yellow; fruit narrow-ellipsoid, dry. **C. linearis.**

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PITTOSPORUM.

673. **Leaves flat at the margin** 674

Leaves recurved at the margin 675

674. **Petals quite white.**

A large shrub or finally a tree, occasionally quite tall; branchlets whorled; leaves large, broad-lanceolar, entire, soon glabrous, those at the summit of the branchlets whorl-like crowded; flowers fragrant, several or many, terminal; sepals unequally connate; fruit turgid, outside brownish- or reddish-yellow; valves two, rarely three; seeds almost ruby-colored, sticky. **P. undulatum.**

Petals quite yellow.

A tall shrub or slender tree; branchlets often pendent; leaves from lanceolar- to broad-linear, much pointed, entire, glabrous; flowers few or only two together or solitary, fragrant; fruit strongly compressed; valves two, rarely three, almost of bony hardness, dull orange-colored outside, bright-yellow inside; seeds orange-red, sticky. **P. phillyroides.**

675. **Petals quite yellow.**

A shrub, finally large or even then arborescent; leaves large, from ovate to narrow-lanceolar, entire, pointed, beneath as well as the branchlets and stalklets beset with brownish hairlets; flowers few or several; fruit turgid, two- or three-valved, very firm; seeds garnet-colored, sticky. **P. revolutum.**

Petals mixedly purplish and yellowish.

A small or sometimes middle-sized tree; leaves from lanceolar- to linear-elliptical, entire, densely beset beneath with short hairlets; flowers several, few or sometimes only two or one; fruit turgid, very firm, two-valved; seeds brownish-red, sticky. **P. bicolor.**

BURSARIA.

676. **Seeds placed vertically, surrounded by a thin and narrow border.**

Shrub, from rather dwarf to tall, occasionally becoming a tree, not rarely somewhat spinescent, flowering late in the season; leaves scattered or fascicled, generally small and entire, from obovate- to elliptical-cuneate; flowers small, in panicles; petals white; fruit obcordate- or renate-orbicular, rather small, dry. **B. spinosa.**

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MARIANTHUS.

677. Petals disconnected.

Quite dwarf; leaves small, from ovate- to linear-cuneate or verging into an elliptic or lanceolar form, often indented at the summit, flat or recurved at the margin, soon glabrous; flowers small, solitary or sometimes two or three together; petals white, often tinged with red; fruit small, quadrate- or renate-orbicular, bent downward; seeds wrinkled. **M. procumbens.**

Petals cohering into a tube.

Twining; leaves rather large, from ovate- to lanceolar-elliptical, often somewhat bilobed at the base; flowers pendent, quite long; petals outside usually green-yellowish towards the base, orange-colored towards the middle, yellowish towards the summit and throughout inside; fruit narrow-ellipsoid, dry. Figure 10. **M. bignoniaceus.**

RUTACEAE.

ACRONYCHIA.

678. Fruit quadrangular.

Glabrous; leaves consisting of one or rarely of three elliptic or ovate entire rather thin leaflets; flowers in cymes; petals pale, contiguous before expansion, much longer than the sepals; filaments and style somewhat beset with short hairlets; fruit whitish. **A. laevis.**

GEIJERA.

679. Leaves short-stalked, narrow, equally green on both sides.

A tall shrub, finally arborescent; leaves rather long, entire, usually broad-linear, the carinular venule only perceptible; panicle few-flowered; petals small, yellowish-white, contiguous before expansion; ovularies with one ovule each; pericarp very imperfectly separating an inner layer (endocarp); outer portion of seed (testa) hard, shining-black. **G. parviflora.**

ERIOSTEMON.

680. Petals contiguous before expansion 681

Petals overlapping before expansion 697

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681. Glabrous or beset with often starry hairlets 682

Extensively or scantily beset with shining scalelets ... 692

682. Leaves very broad.

Leaves large, oval, glabrous, flat, entire, shining, of a slightly reddish hue and an oily lustre; petals unknown, but probably contiguous before expansion; fruit unknown.
E. amplifolius.

Leaves small or comparatively narrow 683

683. Flowers all axillary and usually solitary.

Dwarf; leaves linear- or narrow-lanceolar, pointed, almost or quite glabrous; flowers seldom two together; petals white, outside glabrous; filaments suddenly pointed at the apex; stigmas minute, united; fruitlets conspicuously pointed. **E. pungens.**

Flowers mostly or all terminal, generally crowded or umbellate 684

684. Ovularies less than five 685

Ovularies five 686

685. Leaves truncate or bilobed at the summit.

Shrub, from dwarf and depressed to rather tall and erect; branchlets beset with starry hairlets; leaves often serrulated, from almost lanceolar to ovate and elliptical, but never attenuated into a pointed apex, glabrous, shining on both pages; flowers generally in corymbs or umbels; petals small, glabrous, white, tinged with red; filaments glabrous; ovularies two or three, rarely four; fruitlets conspicuously pointed. **E. Hillebrandi.**

Leaves acute or rounded-blunt at the summit.

Leaves quite small, from linear to almost cordate, revolute at the margin, underneath beset with starry- or scaly-united hairlets; flowers terminally crowded, very small; petals yellowish or whitish; filaments scantily beset with hairlets; stigmas minute, united; ovularies always two; fruitlets blunt. **E. capitatus.**

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686. Calyx about half as long as the petals.

A slender shrub, much beset with spreading hairlets; leaves rather small, crowded, from elliptical- to broad-linear, revolute at the margin; flowers crowded into terminal umbels; petals yellow, almost glabrous; filaments exserted, glabrous; anthers blunt; fruitlets ending in a long and narrow appendage. **E. phylicoides.**

Calyx **very much shorter than the petals or obliterated** 687

687. Stigmas **large, generally disconnected** 688

Stigmas **very minute, connected** 690

688. Leaves **revolute at the margin.**

An alpine shrub, usually of low stature; leaves mostly crowded, small, very firm, from elliptic- to orbicular-ovate, beset with starry hairlets underneath; flowers terminal, solitary or two or three together; petals small, yellow; filaments glabrous; anthers erect, blunt; stigmas clavate, reflexed; fruitlets blunt. **E. trymalioides.**

Leaves **flat** 689

689. Stigmas **capitulate-connected.**

A shrub, from dwarf to rather tall; leaves often large, flaccid, from lanceolar- to ovate-elliptical, beset with starry hairlets underneath; umbels sessile, few-flowered; calyx rudimentary; petals yellow; filaments glabrous; anthers erect, blunt; fruitlets pointed. **E. correifolius.**

Stigmas **disconnected, spreading.**

A dwarf shrub; leaves flaccid, chiefly fascicular-crowded, sessile, from elliptical- to obcordate-cuneate, densely beset with starry hairlets; flowers large, terminal, solitary; calyx absent; petals yellow; filaments glabrous; anthers erect, blunt; fruitlets blunt. **E. pleurandroides.**

690. Leaves **truncate or bilobed at the summit.**

Shrub, rather tall, quite glabrous; leaves firm, comparatively large, narrowly cuneate-elliptical, slightly bilobed at the upper end, but otherwise entire, recurved at the margin, greyish underneath; umbels terminal, short-stalked; petals relatively long, tubular-coherent towards the base; filaments exserted, glabrous; anthers blunt; fruitlets apiculated. Figure 15. **E. Ralstoni.**

Leaves **acute or rounded-blunt at the summit** ... 691

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691. Leaves flat.

A subalpine shrub; leaves small, rather thin, from ovate- to elliptic-lanceolar, glabrous, almost entire, shining on both pages; flowers few, in umbels or two together or sometimes solitary; fruitlets pointed; seeds shining.
E. lamprophyllus.

Leaves recurved at the margin.

An alpine shrub; leaves small, crowded, thick, from narrow-elliptical to broad-linear, underneath densely beset with minute whitish hairlets, entire at the margin; flowers few, in umbels or only three or two together; petals small, yellowish; filaments glabrous; anthers blunt; fruitlets apiculated. **E. phylicifolius.**

692. Petals glabrous, white... 693

Petals outside beset with scalelets, inside yellow ... 694

693. Leaves elongated, from elliptic- to linear-lanceolar.

Tall shrub, finally arborescent; leaves often thin in texture, entire, flat, underneath beset with silvery-shining scalelets; flowers in simple or compound corymbs; petals small; ovularies glabrous; fruitlets slightly apiculated.
E. squameus.

Leaves rather abbreviated, nearly ovate.

An alpine shrub; leaves very firm, flat, entire, underneath beset with silvery-shining scalelets; flowers solitary or sometimes two or few together; petals small; filaments glabrous; anthers blunt; ovularies beset with scalelets; fruitlets slightly apiculated. **E. ovatifolius.**

694. Leaves about half as broad as long.

A subalpine shrub; leaves rather small, obovate-cuneate, recurved at the margin, rounded or slightly bilobed at the summit, underneath beset with silvery-shining scalelets; umbels terminal, sessile, few-flowered; filaments glabrous; fruitlets hardly apiculated. **E. ozothamnoides.**

Leaves one-third as broad as long or proportionately still narrower 695

695. Leaves bilobed at the summit.

A desert-shrub, very glandular-granular; leaves from linear- to elongate-cuneate, often recurved at the margin,

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underneath beset with silvery-shining scalelets; umbels with several flowers; filaments glabrous; fruitlets hardly apiculated. **E. sediflorus.**

Leaves **lobeless at the summit** 696

696. Leaves **rather elongated.**

A shrub, from dwarf to somewhat tall; leaves from narrow- to linear-elliptical, mostly flat, underneath beset with silvery-shining scalelets; umbels terminal, simple or sometimes compound; filaments glabrous; fruitlets hardly apiculated. **E. lepidotus.**

Leaves **much abbreviated.**

A low alpine shrub; leaves quite small, crowded, thick, narrow-elliptical, recurved at the margin, underneath beset with silvery-shining scalelets; umbels terminal, sessile; filaments glabrous; fruitlets somewhat apiculated; seeds without any lustre. **E. alpinus.**

697. Anthers **terminated by a very conspicuous appendage** 698

Anthers **terminated by a very minute appendage** ... 699

698. Anthers **ending in a bearded narrow appendage.**

Shrub, from dwarf to rather tall, almost glabrous; leaves from elliptical- to linear-lanceolar or broad-linear, entire, generally flat, of an oily lustre and slightly reddish tinge; petals pink, glabrous, somewhat connivent; filaments almost coherent, ciliolated; fruitlets blunt. **E. Crowei.**

Anthers **ending in a glabrous broadish appendage.**

Shrub, rather tall; leaves quite large, generally lanceolar, of thick texture, finally glabrous; flowers relatively large, axillary, solitary, their stalklets bearing several overlapping roundish bracts; petals pink, densely beset with minute hairlets; filaments conspicuously ciliolated; fruitlets blunt. **E. lanceolatus.**

699. Fruitlets **erect, along the inner angle high-connate, blunt.**

A shrub, usually tall, almost glabrous, but rough from granular glandules; leaves comparatively large, of rather thin texture, from cuneate- to elliptical-lanceolar, flat, entire, sessile; flowers usually solitary; petals whitish; filaments ciliolated; fruitlets blunt. **E. trachyphyllus.**

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Fruitlets divergent from the base, conspicuously pointed 700

700. Leaves elongated.

A shrub, rather tall, rough from granular glandules; leaves usually quite large, from narrow- to elliptical-lanceolar, sessile, flat, of a greyish hue; flowers generally in umbels; petals rather large, white or outside reddish; filaments ciliolated. **E. myoporoides.**

Leaves abbreviated 701

701. Leaves of a greyish hue.

A small shrub or half-shrubby plant, almost glabrous; leaves thick, from quite obcordate to elliptic-obovate, often also somewhat cuneate or even spatular, to some extent bent inward, beneath as well as the branchlets glandular-rough; flowers solitary or seldom two together; petals white, tinged with red; filaments ciliolated. **E. obovalis.**

Leaves shining-green.

A slender shrub or half-shrubby plant, never tall, glandular-rough; leaves very small, from cuneate- or rhomboid-elliptical to somewhat ovate or even cylindric-linear, blunt; flowers terminal, solitary or two or three together; petals white, tinged with red, densely beset with minute hairlets; filaments flattened, crisply ciliolated. **E. difformis.**

ZIERIA.

702. Leaves all simple.

Shrub, seldom tall; leaves comparatively small, from oval to narrow-elliptical, revolute at the margin, densely beset with minute hairlets, some of the leaves exceptionally scattered or ternately whorled; flowers solitary or two or three together, short-stalked; petals usually pink. **Z. veronicea.**

Leaves nearly all consisting of three leaflets... ... 703

703. Anthers pointed.

A shrubby plant, almost glabrous; leaflets firm, nearly linear or somewhat lanceolar, pointed, revolute at the margin, paler beneath; cymes with few flowers; petals whitish. **Z. laevigata.**

Anthers blunt 704

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704. Leaflets small, revolute at the margin.

A tall shrub; leaflets from ovate to elliptical, densely beset with short hairlets; bracts leafy; cymes very short, few-flowered; petals whitish. **Z. cytisoides.**

Leaflets usually large, flat or slightly recurved at the margin.

Tall shrub or small tree, nearly glabrous or somewhat beset with minute hairlets; leaflets rather thin in texture, from lanceolar to elliptical-ovate; cymes usually ample and many-flowered; petals whitish. **Z. Smithii.**

BORONIA.

705. Petals **bluish.**

A half-shrub or small shrubby plant; leaves all simple, small, usually linear- or elliptic-semicylindrical, blunt, often glandular-rough beneath; petals overlapping at the margin before expansion; filaments beset with hairlets; anthers terminated by a rather conspicuous appendage; seeds rough, without any lustre.

B. coerulescens.

Petals pink or brightly red or whitish 706

706. Petals **contiguous at the margin before expansion.**

A dwarf, alpine shrub, always glabrous; leaflets generally five, very small, from obcordate to ovate; rhachis short; flowers small, solitary; petals pink or reddish; filaments glabrous. **B. algida.**

Petals overlapping at the margin before expansion ... 707

707. **Leaves or leaflets almost filiform or semicylindrical** ... 708

Leaves or leaflets almost or quite flat 709

708. **Anthers without any appendage.**

Half-shrub or almost herbaceous plant, dwarf and glabrous; leaves very narrow and simple or consisting of three very slender leaflets; flowers solitary or three together; petals small, glabrous, pink; filaments scarcely beset with hairlets, thickened upwards; seeds shining, smooth.

B. filifolia.

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Anthers terminated by a small appendage.

Shrubby, never tall, usually glabrous; leaves short-stalked, consisting of three or rarely of five very small and clavate-cylindrical leaflets; flowers solitary or two or three together, quite small; petals rather brightly red, as well as the filaments glabrous; seeds without any lustre.
B. clavellifolia.

709. Leaves simple or ternately or biternately compound 710

Leaves pinnate 711

710. Sepals nearly as long as the petals.

Half-shrubby or almost herbaceous, dwarf, nearly glabrous; leaves always simple, from broad- to narrow-lanceolar; flowers three or two together or oftener solitary; petals small, pink or oftener whitish, glabrous outside; filaments scarcely beset with hairlets; anthers without any appendage; seeds shining, smooth. **B. parviflora.**

Sepals much shorter than the petals.

Half-shrub or shrub, never very tall; leaves either simple and then from linear- to ovate-lanceolar and entire, or consisting of once or twice ternate small entire or at the summit indented leaflets, these from linear- to rhomboid-lanceolar in form; flowers from one to three or rarely more; petals pink; filaments beset with hairlets; anthers terminated by a small appendage; seeds rough, without any lustre. **B. polygalifolia.**

711. Leaves stalked, usually glabrous, the leaflets generally broadish, in rather distant pairs.

Generally a shrubby plant, often robust, sometimes very tall; leaflets firm, from linear- to elliptic-lanceolar, mostly of an oily lustre and slightly reddish hue; the rhachis often dilated; flowers relatively large, three or more together; petals pink; filaments beset with crisped hairlets, thickened towards the summit; seeds shining, smooth. **B. pinnata.**

Leaves almost sessile, the leaflets always narrow, in closely approximated pairs and usually beset with hairlets.

A half-shrub or slender shrub, from dwarf to somewhat tall; leaflets small, often almost linear and flaccid; flowers solitary or from two to few together; petals pink; filaments beset with rather straight hairlets; anthers without any appendage; seeds shining, smooth. **B. pilosa.**

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CORREA.

712. Calyx cleft beyond the middle.

A shrub, often tall in age, scantily beset with hairlets; leaves usually of thin texture, from cordate- to lanceolar-ovate, somewhat denticulated; flowers two or three together or solitary, their stalklets very thin and rather long, jointed; lobes of the calyx from deltoid to semi-lanceolar, pointed; petals coherent, greenish or dull-purplish; four of the filaments dilated towards the base; anthers yellow. Figure 14. **C. aemula.**

Calyx lobeless 713

713. Petals disconnected, white, comparatively short.

A coast-shrub, often tall in age; leaves of thick texture, from orbicular to ovate, beneath closely beset with very short hairlets; flowers two together or solitary, rather short; anthers red. **C. alba.**

Petals coherent, greenish or largely red outside, comparatively long 714

714. Four of the filaments dilated towards the base.

A shrub, seldom very tall; leaves from cordate to elliptical; flowers mostly rather long, often solitary and on short stalklets; calyx firm, entire or minutely quadri-denticulated; anthers yellow. **C. speciosa.**

None of the filaments dilated towards the base.

Shrub of high mountain-regions, usually tall, sometimes arborescent, dwarfed in the alps; leaves of very firm texture, almost flat, from ovate to elliptical; calyx minutely seldom elongatedly denticulated; petals greenish or somewhat yellowish, seldom largely red outside; anthers yellowish-green. **C. Lawrenciana.**

CELASTRINAE.

CELASTRUS.

715. Tall woody climber.

Evergreen; leaves rather large, short-stalked, from almost ovate to lanceolar, somewhat serrulated; flowers small, in panicles; petals yellowish-white; stigma of the fruit-bearing flowers three-cleft; fruit three-celled or rarely two-celled, outside at last reddish-yellow; seeds enclosed in a succulent orange-colored arillar appendage. Figure 28. **C. Australis.**

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LINEAE.

LINUM.

716. Styles connate to beyond the middle.

Perennial, glabrous; leaves from narrow-lanceolar to almost linear; sepals membranously margined; petals blue; staminodia undeveloped; fruit rather small.

L. marginale.

STACKHOUSIEAE.

STACKHOUSIA.

717. Quite depressed; flowers singly terminal.

Alpine plant, forming large patches; leaves carnulent, from spatular- to elliptic-linear; flowers very fragrant; corolla from intense- to pale-yellow; fruitlets dorsally blunt. Figure 29. **S. pulvinaris.**

Erect; flowers in a spike 718

718. Fruitlets each with three dorsal membranous angles.

Coast-plant; leaves very carnulent, from oval-cuneate to spatular; flowers crowded in the spike, fragrant; corolla cream-colored. **S. spatulata.**

Fruitlets dorsally blunt 719

719. Corolla generally cream-colored.

Leaves from oval-lanceolar to almost linear; flowers crowded in the spikes, fragrant. **S. linarifolia.**

Corolla greenish- or bright-yellow 720

720. Flowers crowded in the spike.

Leaves broadly linear; flowers fragrant; corolla intensely yellow, its lobes obtuse. **S. flava.**

Flowers distant in the spike.

Leaves from elliptical to linear or diminutive; flowers small; corolla yellowish or greenish, its lobes acute.

S. viminea.

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SAPINDACEAE.

DODONAEA.

721. **Leaves simple** 722

Leaves pinnate 728

722. **Angles of the fruit membranously expanded** 723

Angles of the fruit without any expanding membrane 727

723. **Membranes of fruit rounded-blunt at the base and at the summit** 724

Membranes of fruit truncate at the summit 726

724. **Leaves minutely lobed.**

Rather tall shrub; leaves cuneate- or broad-linear, the lobes obovate and separable, somewhat pinnularly arranged; fruit usually three-celled; seeds shining.

D. lobulata.

Leaves lobeless 725

725. **Anthers several times longer than the minute calyx.**

Shrub, finally tall; branchlets compressed; leaves broad- or narrow-lanceolar, elongated, flat, entire; stamens and pistils mostly in distinct flowers; fruit three-celled, the expanding membranes about as broad as the cells; dissepiments persistent on the axis; seeds shining.

D. triquetra.

Anthers about as long as the calyx.

Shrub, finally tall, occasionally arborescent, always very viscid; leaves from wedgeshaped-ovate to lanceolar and broad-linear, entire or somewhat denticulated; stamens and pistils mostly in separate flowers; sepals generally four; fruit usually three-celled, the expanding membranes about as broad as the cells; seeds without lustre.

D. viscosa.

726. **Leaves narrow- or elongate-lanceolar.**

Shrub, finally tall; branchlets compressed-angular; leaves usually elongated, almost or quite entire; sepals generally four; stamens and pistils mostly in distinct flowers; fruit four-celled, its expanding membranes almost broader than long; dissepiments persistent on the axis.

D. truncatiales.

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Leaves roundish or ovate.

A shrub, seldom tall; leaves small, slightly crisped and denticulated, sometimes truncate; flowers solitary or two together, the staminate and pistillate mostly distinct, their stalklets recurved, short; fruit four- or five-celled, its expanding membranes narrow. **D. Baueri.**

727. Leaves cuneate, indented at the summit.

Dwarf, diffuse or prostrate; leaves from deltoid- to linear-cuneate, flat; stamens and pistils mostly in distinct flowers; fruit two- or three-celled. **D. procumbens.**

Leaves small, obovate, much narrowed downwards, entire.

A shrub, seldom tall; leaves very firm, without lustre, flat, their lateral venules hardly perceptible; staminate and pistillate flowers mostly in distinct flowers; anthers pale; fruit three- or four-celled; dissepiments seceding from the axis; seeds shining. Figure 27. **D. bursarifolia.**

728. Joints of rhachis dilated.

A shrub, from rather dwarf to tall, very viscid, often beset with hairlets; leaflets all opposite, cuneate- or rhomboid-ovate, denticulated towards the summit; stamens and pistils mostly in distinct flowers; pistillate flowers three or two together or solitary; fruit generally four-celled, the expanding membranes rounded-blunt at the base and summit; seeds without lustre. **D. boronifolia.**

Rhachis narrow throughout.

A rather tall shrub; leaflets alternate or opposite, short, linear, channelled, entire; stamens and pistils mostly in distinct flowers; pistillate flowers three or two together or solitary; fruit four- or five-celled; dissepiment persistent on the axis; seeds without any lustre.

D. stenoxyga.

HETERODENDRON.

729. Leaves from broad-linear to elliptic-lanceolar, entire.

A tall shrub, sometimes arborescent; leaves rather long, flat, beset with minute hairlets; flowers few together, occasionally two or one only; fruit when completely developed four-celled, its divisions turgid; arillar appendage of seeds bright-red. **H. oleifolium.**

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NEPHELIUM.

730. Leaflets large, from almost ovate to lanceolar.

An evergreen tree, finally tall; leaflets very firm, entire or distantly serrulated, mostly pointed, paler beneath; flowers in panicles; fruit glabrous, its divisions breaking transversely; seeds black, shining, their arillar appendage bright-red. **N. leiocarpum.**

ZYGOPHYLLEAE.

NITRARIA.

731. Flowers in cymously paniculated spikes.

A spinescent shrub, finally tall; leaves from linear- to lanceolar-elliptical; spikes in the often rather ample inflorescence short; flowers small; number of stamens threefold that of the petals; fruit edible, dark-purplish or yellow outside; the hard inner part (putamen) fissured at the summit. Figure 17. **N. Schoberi.**

ZYGOPHYLLUM.

732. Sepals and petals five 733

Sepals and petals four 734

733. Fruits almost globular, but five-angular.

Annual herb, never tall; leaflets cuneate-elliptical, notched at the summit; leafstalks dilated; stamens ten; filaments appendiculated; fruit small, often assuming a violet hue, when fresh roundish, when dry splitting between the dissepiments, few-seeded. **Z. iodocarpum.**

Fruits almost semi-ellipsoid, but five-angular, truncate at the vertex.

A somewhat shrubby plant, quite glabrous; leaflets broadly obovate, oblique; stamens ten; filaments appendiculated; fruit dilated at the summit into five short appendages, splitting between the dissepiments, few-seeded; angles of the fruit thick and narrow. **Z. apiculatum.**

734. Angles of the fruit broadly membranous.

A lax shrub; leaflets from obliquely ovate-lanceolar to linear; petals often orange-colored; stamens eight; filaments without appendages; fruits large, splitting at the dissepiment, few-seeded. **Z. fruticulosum.**

Angles of the fruit thick and narrow 735

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735. Fruits truncate **736**

Fruits rounded-blunt **737**

736. Perennial plant, generally large.

Shrubby, often tall, but of weak or even climbing habit; leaflets from oblique-elliptical to linear; stamens eight; filaments without any appendages; fruits rather small, obversely semiovate-pyramidal, acutely quadrangular, splitting between the dissepiments, few-seeded, without any expanding membranes. **Z. Billardieri.**

Annual plant, quite small.

Leaflets elliptic- or linear-cuneate, their stalk dilated; flowers minute; petals whitish; stamens four; fruit very small, acutely quadrangular, without any expanding membranes, splitting between the dissepiments. **Z. ammophilum.**

737. Leaflets obliquely cuneate-obovate, perfectly entire.

Robust herbaceous plant; leaflets very carnulent, their stalk margined; flowers comparatively large; stamens eight; fruit large, almost oval in outline, quadrangular, splitting between the dissepiments, many-seeded. **Z. glaucescens.**

Leaflets broadish-cuneate, notched at the summit.

Small annual plant; leaf-stalk dilated; flowers rather small; stamens eight; fruit almost oval in outline, splitting between the dissepiments, many-seeded. Figure 16. **Z. crenatum.**

TRIBULUS.

738. Fruitlets each with two dorsal spinules, but without any expanding membranes.

Prostrate herb, ordinarily annual; leaflets small, in four to eight pairs, from ovate- to lanceolar-elliptical, generally beset with appressed hairlets; flowers from small to quite large; stamens ten, all perfect; fruit depressed, each of the fruitlets often provided with two additional spinules and generally also with small granular or pungent excrescences and with short hairlets. **T. terrestris.**

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GERANIACEAE.

OXALIS.

739. Petals **white.** ... ...

Stemless; root creeping; leafstalks much elongated, at the base oval and membranous; leaflets three, broadly obcordate; flowerstalks reaching beyond the leaves; flower single; sepals oval; fruit ovate-globular, glabrous; seeds nearly always solitary in each cell. "Wood-Sorrel."
O. Magellanica.

Petals **yellow.**

Stem developed; leafstalks elongated, at the base slightly dilated; flowers in an umbel or reduced to two or one; sepals elliptic-lanceolar; fruit cylindrical, pointed, beset with hairlets; seeds several in each cell.
O. corniculata.

PELARGONIUM.

740. Stem **very abbreviated.**

Root turgid, generally short; leaves radical, rhomboid-ovate; flowers comparatively large; petals rose-colored. Figure 18. **P. Rodneyanum.**

Stem **nearly always elongated.**

Herbaceous; root slender or rather long; leaves almost cordate or somewhat renate or orbicular, lobeless or short-lobed; umbels usually many-flowered; involucrating bracts small, membranous; flowers comparatively small; nectar-tube short; petals often pink or pale.
P. Australe.

GERANIUM.

741. Stem **elongated.**

Root often tuberous; leaves in outline cordate- or renate-orbicular, deeply five- to seven-cleft, the main-segments slit again into three or more broad-linear or semielliptic lobes; sepals short-pointed; petals small, pink; fruitlets without wrinkles; seeds outside reticulated. (Name now re-adopted more exact than that of G. Carolinianum and G. dissectum.) **G. pilosum.**

Stem **very abbreviated.**

An alpine herb; leaves crowded, almost radical, divided into narrow segments and lobes; sepals long-pointed; petals small, pink; seeds almost smooth.
G. sessiliflorum.

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ERODIUM.

742. Petals blue.

Leaves mostly trisected or the lower trifid, the segments or lobes blunt, somewhat rhomboid, upwards unequally indented and not seldom simply incised also; flowers few in each umbel or sometimes only two together or even solitary; sepals short-pointed. **E. cygnorum.**

MALVACEAE.

PLAGIANTHUS.

743. Petals white.

Arborescent, often riparian; leaves large, mostly cordate-ovate, much narrowed toward the upper end, crenate, lobeless or some short-lobed; flowers in paniculate racemes; petals of the staminate flowers exserted, of the pistillate flowers almost enclosed; fruitlets normally five, outward beset with hairlets, somewhat exserted.

P. pulchellus.

Petals pale-yellowish or somewhat purplish 744

744. Herbaceous.

Usually erect plant, restricted to subsaline localities; leaves carnulent, from lanceolar- to orbicular-ovate and often also cuneate; floral leaves connate with their stipules; flowers in leafy spikes; calyx angular; petals short-exserted; fruitlets five, glabrous, enclosed.

P. spicatus.

Dwarf-shrubby.

Rigid plant, restricted to somewhat saline ground, beset with often shining scalelets; branchlets sometimes spinescent; leaves very small, from linear- to obovate-cuneate, entire or at the summit indented, mostly fascicled; flowers minute, axillary, almost or quite sessile, solitary or two or few together; fruitlets outside membranous, often only one developed. **P. microphyllus.**

SIDA.

745. Depressed, semi-herbaceous.

Imperfectly beset with starry hairlets; leaves rather small, from linear-elliptical to orbicular-cordate, crenate or denticulated; stipules linear-filiform; flowers on capillary stalklets, often solitary; fruitlets six to ten, dorsally wrinkled. **S. corrugata.**

Dwarf-shrubby.

Much branched; largely beset with grey starry hairlets; leaves very small, ovate-orbicular, somewhat denticulated

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at the summit truncated; flowers quite small, axillary, solitary, on short stalklets; fruitlets five to eight, dorsally beset with hairlets, but without wrinkles.
S. intricata.

ABUTILON.

746. Shrubby.

A dwarf shrub, closely invested with minute starry hairlets; leaves orbicular- or ovate-cordate, unequally crenate; flowers axillary, solitary, conspicuously stalked; calyx inflated, five-angled, its lobes long-pointed; fruitlets ear-shaped, enclosed, much compressed, slightly coherent.
A. otocarpum.

Annual.

An erect herb, closely invested with minute starry hairlets; leaves rather large, roundish-cordate, pointed, slightly crenate; lobes of the calyx deltoid-semilanceolar; fruitlets pointed, exserted. **A. Avicennae.**

HOWITTIA.

747. Leaves from lanceolar-ovate to broad-cordate.

Invested with starry hairlets; leaves lobeless, hardly indented or almost entire; stipules very fugacious or obliterated; flowers axillary, often solitary; styles connate to the summit; stigmas very short; fruit enclosed; cotyledons trisected. Figure 19. **H. trilocularis.**

HIBISCUS.

748. Involucral bracts about seven, linear, almost disconnected.

A half-shrub, densely invested with minute grey starry hairlets; leaves from lanceolar- to orbicular-ovate, irregularly crenate-denticulate; flowers often axillary and solitary, conspicuously stalked, rather large; petals about three times longer than the calyx. **H. Krichauffii.**

LAVATERA.

749. Involucral bracts to about one-third of their length connate, the disconnected portion nearly semiovate.

A somewhat shrubby plant, usually tall, closely invested with short grey starry hairlets; leaves orbicular-cordate, often bluntly five- to seven-lobed; stipules short, semi-lanceolar-deltoid; flowers comparatively large, usually several together, on short stalklets; calyx nearly twice as long as the involucre; fruitlets much shorter than the calyx, acutangular. **L. plebeja.**

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TREMANDREAE.

TETRATHECA.

750. Sepals appressed.

Leaves from almost ovate-lanceolar to linear, often recurved at the margin, occasionally diminutive or absent; sepals and petals generally four; stamens usually eight; fruit from cuneate- to orbicular-obovate. **T. ericifolia.**

Sepals soon reflexed.

Leaves mostly from obovate- to orbicular-rhomboid, almost flat; sepals and petals generally four; stamens usually eight; fruit obovate-orbicular. **T. ciliata.**

TILIACEAE.

ELAEOCARPUS.

751. Leaves closely beset with brownish hairlets beneath.

A tall tree; leaves short-stalked, from obovate- to elongate-lanceolar, serrulated; flowers in racemes; petals undivided, faintly denticulated at the summit, crimson towards the base, otherwise white; stamens exceeding the petals twice or three times in number. Figure 22.

E. holopetalus.

Leaves almost glabrous.

A small tree, exceptionally tall; leaves conspicuously stalked, from elliptical- to narrow-lanceolar, serrulated, from prominent venules reticulated; flowers in racemes; petals fringed-lobed at and towards the summit, whitish; stamens exceeding the petals five or six times in number; fruit from roundish-ovate to globular, blue outside.

E. reticulatus.

STERCULIACEAE.

THOMASIA.

752. Floral bracts ovate-lanceolar, at the base connate.

A rather small shrub, invested with starry hairlets; leaves of herbaceous texture, from ovate- to narrow-elliptical, recurved at the margin; stipules large, oblique, from rhomboid- to dimidiate-cordate; racemes few-flowered; bracts almost unilateral; calyx somewhat lilac-colored; petals scale-like; anthers narrow, dark, opening by short slits at and near the summit; fruit three-celled.

T. petalocalyx.

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LASIOPETALUM.

753. Leaves flaccid.

A shrub, from quite dwarf to rather tall, invested with starry hairlets; leaves almost cordate, nearly membranous, entire or slightly sinuous; flowers rather large, in cymes; floral bracts linear-filiform, solitary, seldom two; calyx membranous, whitish or pale-pink; anthers opening by two terminal pores; style beset with retroversed fascicular hairlets. **L. Schulzenii.**

Leaves firm 754

754. Flowers crowded almost into a capitulate cyme.

A shrub, finally quite tall; leaves large, from lanceolar- to cordate-ovate, flat, beneath densely invested with whitish minute starry hairlets; floral bracts three, ovate-lanceolar, connate at the base, placed unilaterally; calyx inside glabrous, pale; petals scale-like; anthers at last bursting longitudinally. **L. dasyphyllum.**

Flowers dispersed 755

755. Calyx inside glabrous 756

Calyx inside beset with very short hairlets 757

756. Stalklets of flowers conspicuous.

A shrub, finally rather tall; leaves very firm, mostly narrow-elliptical, almost or quite flat, entire, underneath closely invested with very short starry hairlets; cymes few-flowered; flowers rather large; floral bracts three, from linear- to lanceolar-elliptical, connate at the base, unilateral; anthers opening by two terminal pores. Figure 20. **L. Behrii.**

Stalklets of flowers very short.

A shrub, at last rather tall; leaves very firm, from elliptic- to broad-linear, entire, almost flat, underneath closely invested with minute starry hairlets; floral bracts three, almost linear, connate at the base, unilateral; cymes short-stalked; flowers quite smooth; anthers opening by two terminal pores. **L. parviflorum.**

757. Stalklets of flowers conspicuous.

A shrub, usually rather dwarf; leaves very firm, from elliptic- to broad-linear, entire, almost flat, underneath closely beset with minute starry hairlets; cymes racemose, each on a conspicuous very slender stalk; flowers quite

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small; floral bracts three, very short, from ovate- to linear-lanceolar, connate at the base, unilateral; anthers opening by two terminal pores. **L. Baueri.**

Stalklets of flowers very short.

A shrub, finally quite tall; leaves very firm, from ovate- to lanceolar- or narrow-elliptical, entire or somewhat sinuous at the margin, or at or near the base slightly lobed, almost or quite flat, underneath closely beset with starry hairlets; flowers comparatively large; floral bracts three, from lanceolar- to narrow-linear, connate at the base, unilateral; anthers opening by two terminal pores. **L. ferrugineum.**

COMMERSONIA.

758. Staminodia singly placed between the stamens.

A shrub, from rather dwarf to tall; leaves mostly from cordate- to ovate-lanceolar, lobeless or few-lobed, crenulated or irregularly denticulated, beneath densely beset with hairlets; flowers in cymes; calyx whitish; staminodia linear-lanceolar, scarcely exserted; fruit armed with spinescent excrescences, opening between the dissepiments; seeds appendiculated. **C. dasyphylla.**

Staminodia ternately placed between the stamens.

A tall shrub or finally a small tree; leaves large, from cordate- to ovate-lanceolar, often acuminate, beneath paler and beset with starry hairlets, serrate- or repand-crenate, lobeless or short-lobed; cymes paniculate; staminodia glabrous, as long as or longer than the calyx, spatular-cuneate, with linear base; fruit beset with hispid bristlets, opening between the dissepiments; seeds appendiculated. **C. Fraseri.**

BRACHYCHITON.

759. Calyx outside scantily beset with hairlets.

An evergreen tree, sometimes tall; leaves simple, firm, glabrous, shining, those of the adult plant verging into a mainly ovate or rhomboid form, terminated by a long and narrow acumen, and often producing a pointed lobe on each side; flowers in rather short panicles; calyx yellowish- and red-speckled; ovularies rudimentary in the principal staminate flowers; stamens less developed in the principal pistillate flowers; fruitlets five, very large, hard; seeds mutually cohering, their brittle outer integument partly persistent, outside invested with starry hairlets. Figure 21. **B. populneus.**

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EUPHORBIACEAE.

EUPHORBIA.

760. Leaves rather long, from broad-linear to narrowly lanceolar-elliptical.

Poison-herb, erect, rather tall, glabrous, somewhat succulent; leaves partly scattered, often truncate and imperfectly denticulated; glandules of the involucre renate, brownish, undivided; fruit rather large; seeds appendiculated. **E. eremophila.**

Leaves small, from roundish to almost oval 761

761. Subtle-downy; glands denticulated.

Poison-herb, dwarf; leaves roundish- or cuneate-ovate, serrulated, oblique; lobes of the involucre and glandules red; fruit very small; seeds without any appendage. **E. erythrantha.**

Glabrous; glands entire.

Poison-herb, prostrate; leaves from oblique-elliptical to roundish; fruit very small; seeds without any appendage. **E. Drummondi.**

OMALANTHUS.

762. Fruit without any appendages.

Glabrous; leaves long-stalked, from ovate-deltoid to almost rhomboidal, pointed, of thin texture, flat, without lustre; flowers in racemes; calyx deciduous; fruit roundish; seeds much enclosed in an arillar appendage. **O. Leschenaultianus.**

BERTYA.

763. Leaves flat.

Arborescent, somewhat beset with hairlets; leaves elongate-elliptical, of thin texture; sepals three times longer than the bracts; fruit almost ovate, in length considerably exceeding the sepals. **B. Findlayi.**

Leaves recurved or revolute at the margin 764

764. Leaves broad-linear, revolute at the margin.

Shrubby, glabrous, somewhat viscid; fruit almost ellipsoid, in length considerably exceeding the sepals. **B. Cunninghami.**

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Leaves narrowly lanceolar-elliptical, recurved at the margin.

Shrubby, closely beset with starry hairlets; fruit slightly exceeding the sepals. Figure 23. **B. oleifolia.**

BEYERIA.

765. Fruit beset with hairlets.

A tall shrub, finally almost arborescent, scarcely viscid; leaves rather long, firm, oval- or lanceolar-elliptical, somewhat recurved at the margin; flowers solitary or two or three together; fruit comparatively large. **B. lasiocarpa.**

Fruit glabrous 766

766. Leaves oval- or elliptical-lanceolar.

A shrub, often tall, always viscid; leaves firm, generally dark-green and shining above, often closely beset with minute white hairlets beneath; flowers solitary or two or three together; stalklets much longer than the calyx; fruit comparatively large. **B. viscosa.**

Leaves broad-linear, blunt.

A rather dwarf shrub; leaves firm, blunt, narrowed towards the base, hardly viscid or shining, pale-greenish or whitish beneath; stalklets about as long as the calyx; fruit comparatively small. **B. opaca.**

RICINOCARPUS.

767. Fruit densely beset with minute spinular excrescences.

A rather tall, almost glabrous shrub; leaves rigid, elongate-linear, closely revolute at the margin; flowers terminal, fragrant, conspicuously stalked, generally one pistillate flower accompanied by a few staminate flowers, the sepals of the latter connate towards the base; petals white, comparatively long, usually six; fruit relatively large. **R. pinifolius.**

PORANTHERA.

768. Annual.

Dwarf; leaves almost flat, membranous, from linear-elliptical to spatular-ovate; racemes capitular, forming a leafy corymb. **P. microphylla.**

Perennial 769

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769. **Leaves abbreviated, linear, revolute at the margin.**
Rather dwarf; leaves crowded, rigid; racemes capitular, forming a compact corymb. **P. ericoides.**

Leaves elongated, from broad-linear to narrow-lanceolar, flat or somewhat recurved at the margin.
Rather tall; leaves firm; racemes capitular, forming an ample corymb. **P. corymbosa.**

AMPEREA.

770. **Stems and branches prominently triangular or biangular.**
Perennial, slender herb; leaves small, distant, occasionally almost absent, mostly lanceolar- or rhomboid-cuneate and somewhat indented; flowers in small lateral or axillary clusters. **A. spartioides.**

CLAOXYLON.

771. **Leaves conspicuously stalked.**
Finally a good-sized tree; leaves almost membranous, from ovate- to elliptic-lanceolar, denticulated; flowers very small, in racemes, the staminate and the pistillate flowers mostly on distinct plants. **C. Australe.**

ADRIANA.

772. **Leaves scattered, conspicuously stalked.**
Mainly a desert-shrub, scantily or extensively beset with starry hairlets; leaves often from ovate-lanceolar to cordate in outline and three-lobed, with two stipitate glandules at the base; flowers rather large, in spikes, the staminate and the pistillate flowers on distinct plants; fruit rather large. **A. tomentosa.**

Leaves opposite, hardly stalked.
Exclusively a coast-shrub, scantily or extensively beset with starry hairlets; leaves ovate-lanceolar or somewhat rhombeous, lobeless, with two stipitate glandules at the base; flowers rather large, in spikes, the staminate and pistillate flowers on distinct plants; fruit rather large. **A. quadripartita.**

MICRANTHEUM.

773. **Stamens six to nine.**
A shrub, often tall, almost or quite glabrous; leaves rather rigid, from linear- to cuneate-elliptical; flowers small, solitary or few together. **M. hexandrum.**

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PSEUDANTHUS.

774. Leaves mostly ovate.

A small spreading shrub; leaves quite small; sepals linear-spathulate; three of the filaments much longer than the anthers. **P. ovalifolius.**

Leaves mostly orbicular.

A small spreading shrub; leaves quite small; sepals yellowish, ovate-spathulate; none of the filaments much longer than the anthers. **P. divaricatissimus.**

PHYLLANTHUS.

775. Fruit protracted upwards.

Annual, glabrous, greyish-green; leaves almost elliptical, somewhat cuneate, in two rows turned away from the flowers somewhat to one side; flowers axillary, on very short stalklets; sepals much shorter than the fruit; seeds large, rough, livid, acute at both ends, excavated at the inner angle. **P. trachyspermus.**

Fruit depressed-globular 776

776. Styles undivided.

Herbaceous, glabrous; leaves from narrow- to cuneate-linear or the lower spatular-cuneate, flat or recurved at the margin; calyx of staminate flowers tubular. **P. thesioides.**

Styles divided into two segments 777

777. Beset with short hairlets 778

Glabrous 779

778. Staminate and pistillate flowers on distinct plants.

Perennial, beset with short scattered hairlets; leaves cuneate- or elliptic-obovate, recurved at the margin; stipules dark; flowers quite small, on very short stalklets; fruit small. **P. thymoides.**

Staminate and pistillate flowers on the same plant.

Perennial, invested with minute greyish hairlets; leaves spatular- or elliptic-obovate; flowers on short stalklets; fruit small; seeds smooth, brownish. **P. Fuernrohrii.**

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779. Annual.

Leaves greyish-green, elliptical- or cuneate-obovate, in two rows turning away from the flowers towards one side; flowers minute, on very short stalklets; fruit small, turgidly trilobed; seeds streaked, blackish.
P. lacunarius.

Shrubby.

Tall shrub; leaves rather large, from obovate- to obcordate-orbicular, membranous, in two rows turning away from the flowers towards one side; flowers minute, usually a few together in the axils, on conspicuous stalklets; fruit small, brownish. **P. Gunnii.**

CUPULIFERAE.

FAGUS.

780. Leaves small, flat, crenulated, mostly glabrous; their lateral venules faint.

A very large evergreen tree, with widely spreading branches; leaves firm, from ovate- to orbicular- or deltoid-rhomboid; involucral bracts fringed; staminate flowers mostly solitary; stamens several; fruit-bearing calyces minutely lobed at the summit; fruits oftener triangular than biangular. **F. Cunninghami.**

URTICACEAE.

TREMA.

781. Leaves from cordate- to ovate-lanceolar, much narrowed into the apex.

From a tall shrub to a good-sized tree; leaves somewhat brittle, slightly serrulated; flowers in short cymes; fruit small, from ovate to nearly roundish. Figure 24.
T. cannabina.

FICUS.

782. Fruit-bearing receptacles small, short-stalked, almost globular.

A tree, from small to rather large, hardly evergreen; leaves somewhat brittle, on short stalklets, from cordate- to elliptical-ovate, accuminate, rather oblique, rough; fruit-bearing receptacles solitary or two together, sometimes verging into an ovate or urceolar form. **F. scabra.**

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PARIETARIA.

783. Generally of annual duration.

A small herb; leaves tender, scattered, from ovate and rhomboid to almost cordate, their three main-venules arising from the base together; flowers few together in cymes or almost in clusters; bracts from linear to lanceolar or sometimes from ovate to cordate. **P. debilis.**

AUSTRALINA.

784. Leaves from lanceolar-ovate to orbicular, largely and bluntly denticulated.

A small perennial herb; leaves tender, mostly scattered; flowers axillary, two or few together, the staminate and the pistillate flowers distinct. **A. pusilla.**

CASUARINEAE.

CASUARINA.

785. Arboreous 786

Shrubby 788

786. Seed-like fruits grey.

Branchlets rather robust, ascending, faintly streaked, greyish-green; whorls producing nine to sixteen very short denticular rudimentary leaves; strobile-like fruit-masses depressed, rather small; valvular seed-bearing bracteoles very prominent. **C. glauca.**

Seed-like fruits dark-brown 787

787. Branchlets rather robust, drooping.

Branchlets well streaked, dull-green; whorls producing nine to twelve pointed denticular rudimentary leaves; strobile-like fruit-masses rather large; valvular seed-bearing bracteoles conspicuously protruding. **C. quadrivalvis.**

Branchlets rather slender, ascending.

Branchlets dark-green; whorls producing six to eight minute denticular rudimentary leaves; strobile-like fruit-masses rather large; valvular seed-bearing bracteoles prominent, with a thick dorsal appendage. Figure 25. **C. suberosa.**

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788. Valvular seed-bearing bracteoles with a rough dorsal appendage.

Branchlets very slender; whorls producing usually five denticular rudimentary leaves; strobile-like fruit-masses very small; seed-like fruits dark-brown. **C. nana.**

Valvular seed-bearing bracteoles with a smooth dorsal appendage 789

789. Strobile-like fruit-masses rather large.

Whorls producing six to eight very short denticular rudimentary leaves; seed-bearing valvular bracteoles blunt; seed-like fruits dark-brown. **C. distyla.**

Strobile-like fruit-masses quite small.

Whorls producing six to eight very short denticular rudimentary leaves; seed-bearing valvular bracteoles blunt; seed-like fruits dark-brown. **C. paludosa.**

PHYTOLACCEAE.

DIDYMOTHECA.

790. Pistils three or more.

A rather small shrub; leaves channelled- or semicylindric-linear, usually at the upper end recurved and pointed; flowers small, axillary, solitary, on very short stalklets, the staminate and pistillate flowers on distinct plants; anthers almost sessile, in one circular row; fruitlets rather small, dorsally dehiscent. Figure 43. **D. pleiococca.**

CODONOCARPUS.

791. Leaves from almost lanceolar to obovate and rhombeous.

Finally a small or rarely middle-sized tree, remaining sometimes shrubby; leaves on slender stalks, greyish-green, flat, somewhat acrid; staminate flowers in racemes, their anthers almost sessile, in one circular row; pistillate flowers on distinct plants; fruitlets rather large, on long stalklets; seeds wrinkled. **C. cotinifolius.**

FICOIDEAE.

MOLLUGO.

792. Leaves very narrow.

Glabrous, very small, annual, erect or diffuse; leaves almost whorled, mostly narrow-linear; flowers minute, on capillary stalklets; stamens three to five; fruit very small, three-valved. **M. Cerviana.**

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Leaves broadish 793

793. Sepals acute; fruit five-valved.

Prostrate, beset with soft starry hairlets; stems elongated; leaves comparatively large, from nearly obovate- or spatular- to cuneate-orbicular, almost whorled, flaccid; flowers rather large; stamens five to twenty; appendage of about half the size of the seeds. Figure 41. **M. Glinus.**

Sepals obtuse; fruit three-valved.

Prostrate; stems almost unilaterally beset with crisp hairlets; leaves nearly glabrous, almost whorled, from narrow- or cuneate-elliptical to obovate; flowers rather small; stamens three to ten; appendage much smaller than the seeds. **M. Spergula.**

MESEMBRIANTHEMUM.

794. Leaves almost semicylindric, prominently triangular.

Prostrate; flowers large; petals pink, narrow; styles six to ten; fruit very pulpy, edible. **M. aequilaterale.**

Leaves almost cylindric, hardly angular.

Prostrate; flowers rather large; petals pink, narrow; styles five; fruit slightly pulpy. Figure 39. **M. Australe.**

TETRAGONIA.

795. Prostrate, herbaceous.

Mainly a coast-plant; densely beset with transparent minute moist papules; leaves from deltoid- to ovate-rhomboid; flowers small, nearly sessile; lobes of the calyx yellowish inside; fruit broader upwards, bluntly angular, green. "New Zealand Spinage." **T. expansa.**

Climbing, woody.

Mainly a coast-plant; densely beset with transparent minute moist papules; leaves from lanceolar- to ovate-rhomboid; flowers small, long-stalked; lobes of the calyx yellow inside; fruit almost spherical, succulent, red. Figure 40. **T. implexicoma.**

CARYOPHYLLEAE.

STELLARIA.

796. Leaves sharply pointed.

Perennial, sometimes tall; branchlets beset with crisp hairlets; leaves rigid, from ovate- to narrow-lanceolar, attenuated into a very acute apex; sepals pungent; petals developed. **S. pungens.**

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Leaves hardly pointed 797

797. Petals undeveloped or rudimentary.

Annual, glabrous; leaves narrow-lanceolar; flowers solitary, their stalklets usually abbreviated; stamens five to ten, much shorter than the sepals. **S. multiflora.**

Petals developed 798

798. Leaves linear, rather long.

Perennial, glabrous; flowers solitary, their stalklets much elongated. (S. glauca.) **S. palustris.**

Leaves from ovate to lanceolar, rather short.

Perennial, often tall, sometimes extending to great length; leaves flaccid, stalked; flower-stalklets elongated. **S. flaccida.**

SAGINA.

799. Perennial, prostrate.

Very small plant; stalklets curved after flowering; sepals finally spreading; petals usually developed. **S. procumbens.**

Annual, erect.

Minute plant; stalklets straight after flowering; sepals continuing erect; petals undeveloped or rudimentary. **S. apetala.**

COLOBANTHUS.

800. Densely tufted, depressed.

An alpine plant; leaves abbreviated, rigid, linear-triangular, channelled, much pointed; flowers solitary, on very short stalklets. Figure 32. **C. Benthamianus.**

Almost stemless, erect.

Leaves elongated, narrow-linear, acute; flowers solitary, on long stalklets. **C. Billardieri.**

POLYCARPON.

801. Stamens three.

An annual, glabrous herb, spreading or prostrate; leaves from elliptical- to spatular-obovate, simply opposite or oftener in double pairs almost whorled; stipules and bracts pointed, quite scarious; flowers very small, in cymes. **P. tetraphyllum.**

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SPERGULARIA.

802. Petals rosy-red.

A perennial, small plant, often much beset with glandular hairlets; leaves linear-filiform; stipules scarious; flowers in cymes; sepals without any prominent venule; stamens five to ten; seeds often membranously margined.
S. rubra.

SAPONARIA.

803. Leaves very small, filiform-linear.

An annual, small, erect plant, beset with glandular hairlets; flowers solitary, conspicuously stalked; petals narrow, pink or white; stamens shorter than the petals; fruit small, ellipsoid. **S. tubulosa.**

SCLERANTHUS.

804. Tube of the calyx shorter than the lobes 805

Tube of the calyx longer than the lobes 806

805. Calyx-lobes broad-membranous.

A laxly tufted, perennial, desert-plant; leaves broadish-trigonous-linear, much pointed; flowers in sessile clusters; calyx deeply five-cleft, its lobes from lanceolar- to orbicular-ovate and pointed; stamens five, elongated; fruit only at its base adnate. **S. pungens.**

Calyx-lobes narrow-membranous.

A subalpine, perennial, small plant; leaves very narrow; flowers in sessile clusters; calyx five-cleft to rather beyond the middle, its lobes lanceolar- or deltoid-ovate; stamens two, rather abbreviated; fruit only at its base adnate.
S. diander.

806. Flowers two at the summit of solitary stalks.

An alpine and subalpine plant, densely tufted and much depressed; leaves acicular-linear; flowers minute; calyx four-cleft to less than the middle; stamen one; fruit enclosed, but only at its base adnate. **S. biflorus.**

Flowers single on solitary stalks.

A densely tufted and much depressed alpine plant; leaves acicular-linear; flowers minute; calyx five-cleft to less than the middle; stamen one; fruit enclosed, but only at its base adnate. Figure 33. **S. mniarioides.**

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PORTULACEAE.

PORTULACA.

807. Leaves from obovate- to elliptical-cuneate, very carnulent.

An annual, prostrate herb; leaves mostly scattered on the stems, crowded at the flowers, always glabrous, often acidulous; minute stipular hairlets generally near the base of the leaves; flowers terminal, several, few or sometimes solitary, sessile; calyx-segments dorsally angular; petals tender-membranous, often five, yellow, rarely red; stamens usually from seven to twelve; stigmas capillary, five; lower portion of fruit adnate. **P. oleracea.**

CLAYTONIA.

808. Sepals deciduous.

Quite dwarf, annual; leaves very turgid, from oval- to narrow-ellipsoid; stalklets shorter than the flowers; sepals very carnulent; petals four to seven, pointed; stamens four to ten; stigmas three; fruit hard, black, blunt, only at the summit dehiscent; seeds dotted. Figure 31. **C. pygmaea.**

Sepals persistent 809

809. Stalklets longer than the flowers 810

Stalklets shorter than the flowers 812

810. Seeds dotted.

Annual; stems not rarely flexuous or twining; leaves turgid, from almost elliptical to cylindric-linear, those near the root crowded; stalklets soon distant, in age refracted; petals small, pink; stamens five to ten; fruit pointed; seeds very minute. (C. pusilla.) **C. volubilis.**

Seeds smooth 811

811. Leaves from spatular- to linear-ellipsoid.

Annual; leaves turgid, those near the root crowded; stalklets soon distant, refracted in age; petals small, pink; stamens few; fruit conical-ellipsoid; seeds rather small. **C. calyptrata.**

Leaves compressed-cylindrical.

Perennial, floating or creeping or tufted; leaves mostly scattered, clasping at their base; flowers few or even only two or one; stalklets elongated; petals comparatively large, white; stamens generally five; fruit almost globular; seeds usually three, comparatively large, black, shining. **C. Australasica.**

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812. **Bracts large.**

Annual, prostrate; leaves mostly scattered, from cylindric- to elliptic-linear; flowers small; sepals finally somewhat elongated; stamens few; fruit almost entirely enclosed; seeds comparatively large, shining, smooth.
C. brevipedata.

Bracts minute.

Annual, prostrate; leaves almost linear, those near the root crowded; flowers extremely minute; petals white; stamens usually three; fruit upwards cylindrical, much exserted; seeds one to four, comparatively large, black, shining, smooth. **C. corrigiolacea.**

MONTIA.

813. **Leaves mostly opposite.**

Very small semiaquatic herb; basal leaves spatular-elliptic, the other leaves from linear- to elliptical-lanceolar; flowers very small, on conspicuous stalklets; petals white; fruit almost globular; seeds three or two, somewhat rough. **M. fontana.**

NYCTAGINEAE.

BOERHAAVIA.

814. **Flowers very small, usually several together at the end of the branchlets of the panicle.**

Prostrate or ascending; leaves mostly small, from lanceolar-ovate to cordate, often slightly sinuate or denticulate; branchlets of the panicle exceedingly thin; upper portion of the calyx pink; stamens one to three; stigma dilated, almost hemispherical; fruit very small, rarely glabrous. Figure 44. **B. diffusa.**

POLYGONACEAE.

RUMEX.

815. **Floral leaves almost absent.**

Lower leaves elongated, elliptic-lanceolar, narrowed or truncate or bilobed at the base; inner fruit-sepals hooked-pointed, on each side closely and quite narrowly lobed.
R. Brownii.

Floral leaves copiously present 816

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816. Inner fruit-sepals short-denticulated.

Much branched; lower leaves elongate-lanceolar, at the base rounded or angular; floral leaves gradually smaller; inner fruit-sepals straight-pointed. **R. flexuosus.**

Inner fruit-sepals with one or two very narrow lobes on each side 817

817. Inner fruit-sepals very small, but with a conspicuous dorsal turgidity.

Rather dwarf; leaves from lanceolar- and hastate- to broad-linear, crisped at the margin. **R. crystallinus.**

Inner fruit-sepals rather large, rhomboid, with a faint dorsal turgidity.

Rather tall, hardly branched; root creeping; stem hollow; lower leaves elongated, elliptical-lanceolar, lobeless at the base; floral leaves gradually narrower. **R. bidens.**

POLYGONUM.

818. Prostrate 819

Erect or diffuse 820

819. Flowers axillary, few or solitary.

Leaves very small, from narrow-spatular to almost elliptical and linear; fruit always triangular, smooth, shining. **P. plebejum.**

Flowers in spikes or spike-like racemes.

Beset with appressed hairlets; stipular tube scantily ciliolated, sometimes herbaceously protracted; leaves almost lanceolar; spikes axillary and terminal, short-stalked; flowers greenish; fruit always biangular. **P. prostratum.**

820. Flowers in abbreviated spikes.

Somewhat beset with stiff reversed hairlets; leaves from oval to lanceolar, mostly truncate or bilobed at the base; stipular tube long-ciliolated; spikes few-flowered, reddish, on dichotomous stalks; fruit bi- or tri-angular. **P. strigosum.**

Flowers in elongated spikes 821

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821. Flowers somewhat distant in the spikes.

Nearly glabrous; leaves almost lanceolar, glandular-dotted; stipular tube inflated, short-ciliolated; spikes slender, flaccid; flowers green or reddish, glandular-dotted; fruit tri- or oftener bi-angular, granular-streaked, without lustre. **P. Hydropiper.**

Flowers closely crowded in the spikes 822

822. Leaves glandular-dotted.

Glabrous, tall; leaves mostly broad- or elongate-lanceolar; stipular tube almost without cilioles; spikes stout, somewhat paniculated; flowers greenish or reddish, glandular-dotted; fruit usually biangular. **P. lapathifolium.**

Leaves without any glandular dots 823

823. Nearly glabrous.

Leaves mostly narrow-lanceolar; stipular tube long-ciliolated; spikes slender, often somewhat paniculated; flowers reddish; fruit bi- or tri-angular. **P. minus.**

Appressed-hairy.

Leaves mostly elongated-lanceolar, on very short stalks; stipular tube long-ciliolated; flowers greenish; fruit bi-angular. **P. subsessile.**

MUEHLENBECKIA.

824. Prostrate.

Matted; leaves small, mostly from oval to orbicular; flowers few together or solitary; fruit-calyx often very succulent; fruit acutely triangular. **M. axillaris.**

Erect or climbing or diffuse 825

825. Leaves broad 826

Leaves narrow 827

826. Leaves firm, short-pointed.

Climbing, tall; branchlets robust; leaves large, from ovate-hastate to orbicular-cordate or some lanceolar; flowers mostly in interrupted spike-like racemes, rather

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large; fruit-calyx very succulent when well developed, but oftener withering; fruit obtusely triangular. "Macquarie-Harbor-Grape" in Tasmania.
M. adpressa.

Leaves almost membranous, long-pointed.
Climbing, tall; branchlets slender; leaves from ovate-hastate to orbicular-cordate; flowers in slender spike-like racemes, rather small; fruit obtusely triangular, without lustre. **M. gracillima.**

827. Interwoven-branched.
Tall; leaves linear or verging into an elliptic-lanceolar form, often undeveloped; flowers in axillary clusters or sometimes in spike-like racemes; fruit-calyx withering; fruit triangular, shining. "Polygonum" here vernacularly.
M. Cunninghami.

Strictly erect 828

828. Fruit-calyx withering.
Leaves usually broad-linear, grey-green; flowers in axillary clusters; fruit trigonous-globular, nearly smooth, shining. Figure 42. **M. polygonoides.**

Fruit-calyx very succulent.
Leaves all narrow-linear, bright-green; flowers in axillary clusters; fruit trigonous, somewhat pointed at the summit and at the base, dull-black, rough. **M. stenophylla.**

AMARANTACEAE.

PTILOTUS.

829. Shrubby, much branched.
Closely beset with whitish or greyish stellate hairlets; leaves from rhombeous and orbicular to obovate and lanceolar-elliptical; spike comparatively short, sometimes almost capitular; bract brownish, blunt; bracteoles pointed; sepals about twice as long as the bracteoles, often somewhat purplish, pale or seldom red at the summit. Figure 35. **P. obovatus.**

Almost or quite herbaceous, but little branched or branchless 830

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830. Sepals pale or greenish-yellowish at the summit ... 831

Sepals red at the summit 834

831. Prostrate.

Basal leaves spatular-obovate; stem-leaves more lanceolar; spike somewhat elongated, bearing a rather soft vestiture; bract pointed; sepals about twice as long as the bracteoles. **P. spatulatus.**

Erect 832

832. Spike mostly abbreviated.

Stem mostly simple; leaves from lanceolar to linear; carinular venule of bract and bracteoles faint; sepals very long, pale-yellowish. **P. macrocephalus.**

Spike mostly elongated 833

833. Lower leaves many times longer than broad.

Leaves crisped; spike very long; bract and bracteoles quite colorless and transparent, much shining, rounded blunt, their carinular venule almost obliterated.
P. alopecuroides.

Lower leaves twice or thrice longer than broad.

Rather robust; leaves glabrous, the lower obovate-elliptical, the upper narrow; spike slightly yellowish, some of the upper flowers imperfect; bract much pointed; carinular venule of bract and bracteoles prominent.
P. nobilis.

834. Spike often elongated.

Rather tall and robust; leaves generally glabrous, the lower from obovate to lanceolar, the upper mostly narrower; spike usually somewhat conical; bract brownish, very pointed; sepals mostly large, light-purplish, hardly half as long as the bracteoles. **P. exaltatus.**

Spike always capitular.

Ascendent or erect, never tall; leaves all nearly linear; bract short-pointed; sepals usually curved upwards, hardly half as long as the bracteoles.
P. erubescens.

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ALTERNANTHERA.

835. Sepals quite glabrous.

Prostrate, slightly beset with hairlets; leaves from broad-linear to elliptic-lanceolar, minutely denticulated; spikes very short, often cluster-like; bracts, bracteoles and sepals very scarious, pointed; two or three only of the stamens anther-bearing. **A. triandra.**

EUXOLUS.

836. Fruit considerably longer than the sepals.

Dwarf, diffuse; leaves small, conspicuously stalked, from spatular- to elliptical-obovate, their lateral venules costular; flowers mostly in axillary clusters; sepals usually three, narrow, pointed; fruit reticular-rough.
E. macrocarpus.

POLYCNEMON.

837. Sepals somewhat succulent.

Herbaceous, prostrate; leaves semicylindrical; sepals considerably longer than the bracteoles, colored inside; stamens five; stigmas about as long as the style. Figure 34. **P. pentandrum.**

Sepals dry.

Somewhat shrubby, ascending; leaves thinly semicylindrical, the floral leaves dilated at the base; sepals about as long as the bracteoles, whitish; stamens two; stigmas much shorter than the style. **P. diandrum.**

SALSOLACEAE.

SALICORNIA.

838. Herbaceous.

Comparatively dwarf; rudimentary leaves hardly prominent; spikes elongated, rather thin, with blunt bracts; flowers few or several together; calyx somewhat succulent, terminated by three or four minute lobes; stamens two; seed placed vertically. **S. Australis.**

Shrubby 839

839. Spikes thick, with acute bracts.

Tall, very robust; rudimentary leaves opposite, deltoid, very prominent; flowers three together, the middle one

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pistillate, the two lateral flowers staminate only; calyx much compressed, membranous, terminated by two, three or four very short unequal lobes; stamen one; seed placed vertically. Figure 38. **S. robusta.**

Spikes short, with blunt bracts.

Tall; rudimentary leaves hardly prominent; flowers three together, all staminate and pistillate; calyx terminated by three or four unequal lobes; stamens two; seed placed vertically. **S. arbuscula.**

ATRIPLEX.

840. Fruit-calyx (or bracteal involucre) closed only near the base 841

Fruit-calyx closed to near the middle or still further upwards 846

841. Fruit-calyx of almost spongy texture.

Quite shrubby; leaves from elliptical and lanceolar to orbicular-oval, mostly entire; staminate and pistillate flowers on the same plant; the clusters of the staminate flowers in terminal spikes, of the pistillate flowers solitary and axillary; segments of the fruit-calyx roundish, membranous, with an inflated dorsal appendage. **A. vesicarium.**

Fruit-calyx of almost foliaceous texture 842

842. Staminate and pistillate flowers on the same plant.

Somewhat shrubby; leaves from rhomboid to oval and orbicular, often sinuous and somewhat denticulated; flowers mostly in axillary clusters; fruit-calyx with a stalk-like base, the segments dilated and denticulated. **A. angulatum.**

Staminate and pistillate flowers on separate plants ... 843

843. Leaves from orbicular- to ovate-rhombeous.

Quite shrubby, tall; clusters of the staminate flowers in paniculate spikes, of the pistillate flowers often solitary and axillary; fruit-calyx somewhat turgid, its segments from deltoid- to ovate-orbicular. **A. nummularium.**

Leaves from lanceolar to elliptical or obovate ... 844

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844. Fruit-calyx without any stalk-like prolongation.

Quite shrubby, restricted to the coast, often tall; leaves succulent, glistening, from lanceolar to oval, entire; clusters of staminate flowers mostly in paniculate spikes, those of pistillate flowers generally solitary and axillary; segments of the fruit-calyx from deltoid to rhomboid.
A. cinereum.

Fruit-calyx on a stalk-like prolongation 845

845. Stalk-like prolongation nearly as long as the segments of the fruit-calyx.

Desert-plant, somewhat shrubby; leaves from narrow-elliptical to obovate, entire; clusters of staminate flowers mostly in paniculate spikes, of the pistillate flowers some axillary and solitary; segments of the fruit-calyx almost renate. **A. stipitatum.**

Stalk-like prolongation considerably shorter than the segments of the fruit-calyx.

Coast-plant, somewhat shrubby, often prostrate; leaves from elliptic to lanceolar, entire; clusters of staminate flowers mostly in paniculate spikes, of the pistillate flowers some solitary and axillary; segments of the fruit-calyx from deltoid to cordate and renate.
A. paludosum.

846. Fruit-calyx closed to near the middle 847

Fruit-calyx closed to near the summit 849

847. Fruit-calyx entirely of foliaceous texture.

Quite shrubby; leaves hastate-ovate, entire or somewhat denticulated; staminate and pistillate flowers on the same plant, the clusters of the former in paniculate spikes, of the latter axillary; fruit-calyx turgid, rhomboid, entire and without any appendages. **A. rhagodioides.**

Fruit-calyx succulent and red towards the base ... 848

848. Prostrate.

Almost herbaceous; leaves small, from lanceolar- to cuneate-oval, often denticulated; staminate and pistillate flowers on the same plant, in axillary clusters or some solitary; fruit-calyx rhomboidal. **A. semibaccatum.**

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Erect.

Almost herbaceous; leaves from rhomboidal to obovate, rather large, conspicuously sinuous and denticulated; staminate and pistillate flowers on the same plant, all in axillary clusters; fruit-calyx rhomboidal, turgid.

A. Muelleri.

849. Fruit-calyx of almost foliaceous texture 850

Fruit-calyx succulent or of almost spongy texture ... 851

850. Lobes of the fruit-calyx minute, entire, without any appendage.

Desert-plant, almost herbaceous, often prostrate; leaves from elliptical and cuneate to rhomboidal, usually somewhat sinuous and denticulated; staminate and pistillate flowers on the same plant, all in axillary clusters; fruit-calyx narrow-tubular. **A. leptocarpum.**

Lobes of the fruit-calyx with two pointed lobules and with a dorsal appendage.

Desert-plant, almost herbaceous, often prostrate; leaves from elliptical and cuneate to rhomboidal, usually somewhat sinuous and denticulated; staminate and pistillate flowers on the same plant, all in axillary clusters; fruit-calyx compressed-tubular. **A. limbatum.**

851. Fruit-calyx succulent and green.

Coast-plant, quite herbaceous, prostrate, very succulent, papillular-glistening; leaves small, from elliptical to rhomboidal, indented; staminate and pistillate flowers on the same plant, all axillary, the pistillate flowers solitary or two together; fruit-calyx turgid, its lobes slightly denticulated. **A. crystallinum.**

Fruit-calyx of spongy texture... 852

852. Fruit-calyx flat at the summit.

A desert-shrub, seldom tall; leaves from lanceolar- to rhombeous-ovate, entire or somewhat denticulated; staminate and pistillate flowers on the same plant, in axillary clusters or some solitary; fruit-calyx much enlarged, from top-shaped (turbinate) to almost semi-globular, transversely acute-edged, minutely bilobed at the summit, without any appendages.

A. halimoides.

Fruit-calyx rounded at the summit 853

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853. Fruit-calyx rather large, turgidly obovate.

A desert-plant, almost herbaceous; leaves from obovate to rhombeous, somewhat sinuous and denticulated; staminate and pistillate flowers on the same plant, all in axillary clusters; fruit-calyx minutely bilobed at the summit, without any appendages. **A. holocarpum.**

Fruit-calyx rather small, depressed-globular.

A desert-plant, almost herbaceous; leaves small, from lanceolar- to rhomboid-obovate, slightly sinuous and somewhat denticulated; staminate and pistillate flowers on the same plant, in axillary clusters or some solitary; fruit-calyx minutely bilobed at the summit, without any appendages. **A. spongiosum.**

RHAGODIA.

854. Leaves **mostly opposite** 855

Leaves **mostly scattered** 856

855. **Leaves acute.**

Climbing or somewhat prostrate and diffuse, weak; leaves small, from deltoid to lanceolate-linear; panicle small; fruit red or yellow outside; seed placed horizontally. **R. nutans.**

Leaves obtuse.

Leaves rather large, ovate-hastate or some verging into a rhombeous form; panicle seldom large; fruit red outside; seed placed horizontally. **R. hastata.**

856. **Branchlets often ending in thorns.**

Finally rather tall, rigid; leaves comparatively small, from oval to orbicular and deltoid or hastate; panicle often small; fruit red or yellow outside; seed placed horizontally. **R. spinescens.**

Branchlets seldom ending in thorns.

Finally tall, robust, erect or straggling, rarely dwarfed; leaves succulent, comparatively large, from ovate- to lanceolar- or hastate- or narrow-elliptical; panicle often ample; fruit usually red outside; seed placed horizontally. .. .. **R. Billardieri.**

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CHENOPODIUM.

857. **Perennial** 858

Annual 861

858. **Fruit compressed** 859

Fruit depressed 860

859. **Tall, shrubby.**

Branchlets often ending in thorns; leaves spatular- or linear-elliptical, entire; spikes of flower-clusters often paniculate; stamens five; seed placed vertically.
C. nitrariaceum.

Prostrate, herbaceous.

Somewhat papular; leaves from narrow-lanceolar to rhomboid-hastate; flowers in small axillary clusters; sepals at the base prominently thickened, upwards gradually pointed; stamen one; seed placed vertically.
C. atriplicinum.

860. **Erect, tall.**

Almost herbaceous; leaves from elliptical and oval to almost hastate; spikes of flower-clusters often paniculate; stamens five; seed placed horizontally. **C. auricomum.**

Prostrate, very small.

Leaves minute, from lanceolar and ovate to rhomboid; flower-clusters mostly axillary; stamen one; seed placed horizontally. **C. microphyllum.**

861. **Sepals bluntly keeled.**

Prostrate, odorous, beset with glandule-bearing hairlets; leaves small, from elliptical- to roundish-rhomboid, wavy-sinuous; flower-clusters mostly axillary; stamen one; seed placed vertically. **C. carinatum.**

Sepals fringed-membranous along their keel.

Prostrate, odorous, beset with glandule-bearing hairlets; leaves small, from elliptical- to roundish-rhomboid, wavy-sinuous; flower-clusters mostly axillary; stamen one; seed placed vertically. **C. cristatum.**

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DYSPHANIA.

862. Calyx consisting of a single sepal.

Annual small herb, prostrate or ascending; leaves very small, from ovate to elliptical; flower-clusters singly axillary, often crowded; stamens one to three, but in many of the flowers absent; styles two; seed placed vertically. **D. myriocephala.**

BASSIA.

863. Fruit-calyces two or more, connate 864

Fruit-calyces solitary 865

864. Fruit-calyces usually two, connate towards the base.

Never tall, densely beset with whitish or greyish very short hairlets; fruit-calyces indurated, comparatively long, slender upwards, without any or with quite diminutive spinules, sometimes a third and rarely a fourth fruit-calyx developed from the same base; seed placed horizontally. **B. biflora.**

Fruit-calyces several or many, capitular-connate.

Closely invested with whitish or greyish hairlets; fruit-calyces very much indurated, each with one or two spinules; seed placed horizontally. **B. paradoxa.**

865. Fruit-spinules conspicuous 866

Fruit-spinules inconspicuous or obliterated 869

866. Fruit-calyx with two spinules 867

Fruit-calyx with three to five spinules 868

867. Fruit-calyx with two short spinules.

Densely beset with short, sometimes shining hairlets; fruit-calyx comparatively small, indurated; seed placed horizontally. **B. diacantha.**

Fruit-calyx with two long spinules.

Very densely beset with short whitish hairlets; fruit-calyx comparatively large, much indurated, its spinules strong; seed placed horizontally. **B. bicornis.**

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868. Leaves flattened.

Glabrous; leaves narrowed at the base; fruit-calyx small, indurated, with four to five acicular spinules; seed placed vertically. **B. quinquecuspis.**

Leaves almost semicylindrical.

Glabrous; fruit-calyx small, indurated, with three to four unequal acicular spinules; seed placed vertically.
B. divaricata.

869. Leaves almost semicylindrical.

Prostrate, nearly glabrous; leaves very short, succulent; fruit-calyx minute, almost obliquely pear-shaped, indurated, without any spinules, but with an unilateral carinular prominence; seed placed vertically. Figure 36.
B. salsuginosa.

Leaves flattened 870

870. Fruit-calyx almost glabrous.

Herbaceous, quite dwarf, often prostrate, somewhat beset with hairlets; leaves from lanceolar- to broad-linear, rather flat; fruit-calyces neither indurated nor spinulous, its lobes upwards dilated with somewhat inflexed margin; seed placed horizontally. **B. enchylaenoides.**

Fruit-calyx involved in a lanuginous vestiture ... 871

871. Fruit-calyx with five very small spinules and as many minute appendages.

Somewhat shrubby, never tall, densely beset with whitish hairlets; seed placed horizontally.
B. sclerolaenoides.

Fruit-calyx without any conspicuous spinules and appendages.

Somewhat shrubby, never tall, densely beset with whitish hairlets; fruit-calyces almost globular, minute, nearly membranous; seed placed horizontally.
B. Dallachyana.

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KOCHIA.

872. Horizontal margin of fruit-calyx lobed or denticulated or ciliolated 873

Horizontal margin of fruit-calyx without any lobes or denticles or cilioles 878

873. Margin of fruit-calyx ciliolated or indurate-denticulated 874

Margin of fruit-calyx broadly membranous, deeply five-lobed 876

874. Margin of fruit-calyx conspicuously ciliolated.

Erect, somewhat shrubby, beset with short hairlets; leaves flat, lanceolar-linear; fruit-calyx much depressed, expanded into a hard horizontal lobeless margin.

K. ciliata.

Margin of fruit-calyx denticulated 875

875. Margin of fruit-calyx with five denticles.

Prostrate, hardly shrubby, beset with scattered rather long and soft hairlets; leaves almost flat; fruit-calyx small, somewhat indurated, longitudinally five-lined.

K. brachyptera.

Margin of fruit-calyx with about ten denticles.

Hardly shrubby, mostly beset with short hairlets; leaves very short; fruit-calyx small, somewhat indurated, without any decurrent lines. **K. stelligera.**

876. Leaves mostly opposite.

Shrubby, erect, rather dwarf, often beset with short and shining hairlets; leaves very short, from lanceolar- to ovate-triangular; fruit-calyx expanded into five broad horizontal membranous lobes. **K. oppositifolia.**

Leaves scattered or irregularly crowded 877

877. Expanding membranes of the fruit-calyx almost or quite glabrous.

Shrubby, erect, somewhat beset with short hairlets; leaves very short; appendages at the orifice of the calyx none.

K. brevifolia.

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Expanding membranes of the fruit-calyx invested with minute hairlets.

Somewhat shrubby, erect, much beset with whitish hairlets; leaves generally rather long; appendages at the orifice of the calyx five, very narrow, acute. **K. lanosa.**

878. Fruit-calyx with usually three decurrent membranes.

Somewhat shrubby, erect, glabrous; leaves comparatively long, semicylindric-linear, generally acute; horizontal expansion of the fruit-calyx broad. **K. triptera.**

Fruit-calyx without any decurrent membranes ... 879

879. Fruit-calyx top-shaped below, broad-conical above.

Shrubby, erect, much beset with short hairlets; leaves comparatively short; horizontal expansion of the fruit-calyx broad. **K. pyramidata.**

Fruit-calyx almost hemispherical 880

880. Horizontal membrane of the fruit-calyx quite broad ... 881

Horizontal membrane of the fruit-calyx very narrow 882

881. Leaves rather long.

Shrubby, not rarely spinescent, somewhat beset with whitish or greyish or brownish short hairlets; leaves usually rather long, but sometimes diminutive or obliterated; vertex of the fruit-calyx flat. Figure 36. **K. villosa.**

Leaves rather short.

Shrubby, closely invested with whitish or greyish or brownish short hairlets; leaves crowded, thick, blunt; expansion of fruit-calyx not rarely reddish. **K. sedifolia.**

882. Shrubby and erect.

Slightly beset with very short hairlets; leaves very small, quite narrow, somewhat turgid; flowers very small, crowded into leafy spikes; fruit-calyx much depressed; expansion of fruit not always developed. **K. microphylla.**

Herbaceous and quite dwarf.

Beset with short and somewhat shining hairlets; leaves flat, lanceolate-linear, comparatively long; fruit-calyx, except at its vertex, generally glabrous. **K. humillima.**

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SALSOLA.

883. Annual.

Leaves scattered or near the flowers crowded, short, sessile, cylindrical, spinescent; flowers axillary, sessile; membranous appendages of the fruit-bearing calyx disconnected, dilated; seed placed horizontally. **S. Kali.**

SUAEDA.

884. Seed placed horizontally.

Herbaceous, glabrous; leaves numerous, succulent, almost semicylindrical, short; flowers very small, sessile, two or few together, axillary, seldom solitary. **S. maritima.**

ENCHYLAENA.

885. Fruit-bearing calyx red or yellow.

Prostrate or diffuse, generally beset with short hairlets; leaves scattered, short, somewhat succulent; flowers sessile, axillary, solitary; stamens five; seed placed horizontally. **E. tomentosa.**

THRELKELDIA.

886. Fruit-bearing calyx dark-purplish.

Prostrate or diffuse, always glabrous; leaves scattered, short, somewhat succulent; flowers sessile, axillary, solitary; stamens three; seed placed vertically. **T. diffusa.**

FRANKENIACEAE.

FRANKENIA.

887. Somewhat shrubby.

Leaves small, from ovate- to linear-lanceolar or almost linear, usually recurved at the margin; flowers small, scattered or forming a leafy cyme; petals pink or sometimes white; fruit enclosed. **F. laevis.**

PLUMBAGINEAE.

STATICE.

888. Petals yellow.

Perennial, glabrous herb; leaves firm, large, all basal, obovate- or elliptic-spatular; flowers in unilateral paniculated spikes; calyces upwards dilated and somewhat folded, acutely denticulated; petals disconnected, soon enclosed. Figure 30. **S. Taxanthema.**

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LEGUMINOSAE.

ACACIA.

889. **Leaves reduced to usually foliaceous-dilated and often vertical leafstalks (phyllodia), rarely absent** ... 890

Leaves bipinnate 946

890. **Phyllodia absent, the branchlets resembling phyllodia** 891

Phyllodia present, articulated on the branchlets ... 892

891. **Flowers very small, few in each headlet.**
Low shrub; branchlets furrowed, pungent; headlets of flowers solitary, nearly sessile; fruit narrow, constricted between the seeds; arillar seed-appendage narrow, pale or brownish. **A. spinescens.**

Flowers rather large, many in each headlet.
Low shrub; branchlets pungent; headlets of flowers solitary, on very short stalks; fruit narrow, constricted between the seeds; arillar seed-appendage narrow, pale or brownish. **A. continua.**

892. **Flowers in globular headlets** 893

Flowers in almost cylindrical spikes 937

893. **Phyllodia spinular-pungent.** (Also some forms of A. lanigera) 894

Phyllodia blunt or recurved-pointed 901

894. **Phyllodia from compressed-cylindrical and linear to narrow-lanceolar** 895

Phyllodia somewhat triangular 900

895. **Phyllodia equally streaked by several subtle venules.**
Shrub, rather tall; phyllodia sessile, rigid, compressed-cylindrical, very narrow, straight-pointed; stipules absent; headlets of flowers solitary or two together, on very short stalks; fruit narrow, much curved; arillar seed-appendage almost cup-shaped, amply clasping, bright- or orange-yellow. **A. colletioides.**

Phyllodia lined by only one prominent venule ... 896

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896. **Calyx and corolla mostly five-lobed; seed-appendage absent** 897

Calyx and corolla mostly four-lobed; seed-appendage present 898

897. **Phyllodia from linear- to narrow-lanceolar, slightly curved, at the base narrowed.**

Alpine, tall shrub; phyllodia short, almost equilateral; stipules present; headlets of flowers solitary or two together, short-stalked; fruit strongly compressed, nearly straight, linear-elliptical; seeds placed transversely.
A. siculiformis.

Phyllodia quadrangular-linear, subulate, straight, with broad base sessile.

Shrub, low and spreading; phyllodia short; headlets of flowers solitary, their stalks about as long as the phyllodia or longer; stipules present; fruit broad-linear; seeds placed longitudinally, black and somewhat mottled, without any lustre. **A. juniperina.**

898. **Phyllodia dilated near and at the base.**

Dwarf shrub; phyllodia flat, subulate-linear; stipules obliterated; headlets of flowers solitary, their stalks about as long as the phyllodia or shorter; fruit broad-linear; arillar seed-appendage ample, bilobed, pale.
A. rupicola.

Phyllodia narrow also near and at the base ... 899

899. **Phyllodia quadrangulate-acicular.**

Shrub, mostly prostrate; phyllodia short, sessile, spreading or reversed; stipules minute; headlets of flowers solitary or two together, their stalks about as long as the phyllodia or longer; sepals disconnected; fruit broad-linear; seeds shining; arillar seed-appendage light-brownish.
A. tenuifolia.

Phyllodia quadrangulate-linear.

Shrub, rather tall; phyllodia moderately long, sessile; stipules minute; headlets of flowers solitary or two together, short-stalked; sepals coherent; fruit broad-linear; arillar seed-appendage ample, light-brownish.
A. diffusa.

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900. Phyllodia from dimidiately lanceolar-rhomboid to almost deltoid, the lateral angle below the middle.

Shrub, almost procumbent; phyllodia short, very inequilateral, gradually much pointed; headlets of flowers solitary, their stalks about as long as the phyllodia; fruit narrow, almost straight; seeds roundish, mottled, without any arillar appendage. **A. vomeriformis.**

Phyllodia oblique-cuneate, the lateral angle above the middle.

Low shrub; branchlets pungent; phyllodia very short, inequilateral; headlets of flowers solitary, their stalks rather longer than the phyllodia; fruit narrow, spirally twisted; arillar seed-appendage cup-shaped. **A. acanthoclada.**

901. Phyllodia compressed-filiform 902

Phyllodia flat 903

902. Phyllodia with only one venule on each side.

Tall glabrous shrub; phyllodia generally elongated, hardly rigid, at the apex recurved; the venules impressed; headlets of flowers solitary or oftener two together or shortly racemose; calyx divided into sepals; fruit long, very narrow, bi-convex, often constricted between the seeds. **A. calamifolia.**

Phyllodia finely streaked with several venules on each side.

Tall shrub; phyllodia elongated, as well as the branchlets beset with very minute hairlets; headlets of flowers solitary or two or seldom few together on very short stalks; calyx divided into lobes; fruit linear, convex, between the seeds constricted. **A. rigens.**

903. Phyllodia with one or rarely two longitudinal venules on each side 904

Phyllodia with more than two longitudinal venules on each side 926

904. Headlets of flowers solitary or in pairs. (Also some forms of A. brachybotrya and of A. salicina) 905

Headlets of flowers in racemes 915

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905. Stipules minutely acicular. (Exception: some forms of A. Sentis) 906

Stipules very small and membranous or absent ... 908

906. Rough from short glandule-bearing hairlets.

Tall, visciduluous shrub; phyllodia rather short, from narrowly elliptic-lanceolar to broad-linear, recurved at the summit, otherwise almost straight; headlets of flowers on rather short stalks; fruit narrow, somewhat curved, convex; arillar appendage rather pale, clasping only the base of the seed. **A. aspera.**

Smooth or beset with non-glandular hairlets... ... 907

907. Phyllodia flexuous.

Shrub, finally tall; phyllodia obliquely or dimidiately ovate- or narrow-lanceolar, recurved at the summit; stipules often very conspicuous; stalks of flower-headlets about as long as the phyllodia or longer; fruit very narrow, beset with hairlets; arillar appendage rather pale, clasping only the base of the seed. **A. armata.**

Phyllodia flat.

Shrub or small tree; phyllodia from elliptic-lanceolar to broad-linear, somewhat oblique; stipules often partly undeveloped; headlets of flowers conspicuously stalked, solitary or oftener two together, rarely in racemes; fruit smooth, flat, broad; valves (pericarp) thin; seeds placed transversely, very turgid, mottled; arillar appendage much twisted, clasping only the base of the seed. **A. Sentis.**

908. Phyllodia as long as or shorter than the flower-stalks 909

Phyllodia longer than the flower-stalks 911

909. Phyllodia narrow.

Shrub, generally low, small, broad-linear; phyllodia inequilateral, curved-pointed; headlets of flowers solitary or two together; fruit very narrow, generally arched-curved. **A. lineata.**

Phyllodia broadish 910

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910. Phyllodia twice or thrice as long as broad.

Shrub, seldom tall; phyllodia small, oblique, from elliptic- to obovate-cuneate, recurved- or lateral-pointed; fruit narrow, often almost spirally twisted; arillar appendage pale, extending unilaterally somewhat beyond the base of the seed. **A. acinacea.**

Phyllodia not much longer than broad.

Shrub, generally small; phyllodia very small, oblique, from obovate-rhomboid to nearly orbicular, recurved-pointed; fruit narrow, often almost spirally twisted; arillar appendage pale, extending unilaterally somewhat beyond the base of the seed. **A. obliqua.**

911. Phyllodia with two venules on each side 912

Phyllodia with only one venule on each side ... 913

912. Phyllodia broad-linear, almost blunt.

Shrub, somewhat tall, sticky; phyllodia rather short, sometimes verging into a narrow-elliptic and cuneate form, glandular-dotted; primary venules immersed, secondary anastomosing; headlets of flowers solitary or two together on short stalks; fruit densely beset with interwoven hairlets, broad-linear, compressed, almost straight, seldom constricted between the seeds; arillar appendage comparatively large, pale, closely twisted, much extending on one side of the seed. **A. montana.**

Phyllodia elongate-lanceolar, gradually pointed.

Shrubby or somewhat arborescent, sticky; phyllodia rather long, glandular-dotted, of thin texture, somewhat curved; headlets of flowers generally two together, on short stalks; fruit nearly or quite glabrous, broad-linear, somewhat convex, almost straight, often constricted between the seeds; arillar appendage pale, somewhat sigmoid-patellar, clasping only the base of the seed. **A. vernicifiua.**

913. Phyllodia thin, almost porous from glandular dots.

Shrubby or arborescent; phyllodia from elongate-lanceolar to broad-linear, sticky; headlets of flowers solitary or oftener two or three together, their stalks very short, densely beset with short hairlets; fruit broad-linear; arillar appendage rather pale, somewhat sigmoid-patellular, touching only the base of the seed. **A. leprosa.**

Phyllodia rather firm, without any glandular dots ... 914

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914. Secondary venules of phyllodia prominent, closely striolate-reticularly connected.

Tall shrub, often producing offshoots; branchlets very angular; phyllodia almost straight, from elongate-elliptical to broad-linear, somewhat cuneate, without any lustre; calyx truncate or short-lobed; headlets of flowers solitary or oftener two, seldom several together, on very short stalks; fruit broad-linear, nearly straight, compressed; arillar appendage of seed rather pale, clasping only the base of the seed. **A. stricta.**

Secondary venules of phyllodia very faint.

Shrub, rather small; phyllodia from elliptic- to linear-lanceolar, somewhat curved; headlets of flowers solitary or oftener two together, on very short stalks; fruit generally small, very narrow, convex, curved; arillar appendage broadly obconical, pale, touching only the base of the seed. **A. microcarpa.**

915. Headlets consisting of few or even only two flowers.

Tall shrub; phyllodia from broad- to narrow-lanceolar, firm, their marginal and median-longitudinal venules prominent; racemes short; flowers comparatively large; segments of the corolla generally four or sometimes only three; fruit broad-linear, compressed, prominently margined; seeds brownish, very shining; arillar appendage pale, supporting only the base of the seed.
A. myrtifolia.

Headlets consisting of several or many flowers .. 916

916. Phyllodia short, ovate or somewhat triangular ... 917

Phyllodia mostly elongated, linear or lanceolar or obliquely elliptical 919

917. Racemes abbreviated or sometimes the headlets of flowers solitary or two or three together.

Shrub, rather tall; phyllodia firm, from broad- to lanceolar-obovate, glabrous or beset with minute not rarely silky-lustrous hairlets; headlets of flowers never numerous; fruit from broad-linear to narrow-elliptical; funicle very short; arillar appendage much attenuated, about half as long as the seed. **A. brachybotrya.**

Racemes elongated 918

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918. Phyllodia glabrous.

Shrubby or arborescent; phyllodia small, very inequilateral, from almost deltoid to nearly trapezoid, imperfectly traversed by two main-venules; flowers in each headlet never numerous; fruit flat, narrow, nearly straight, somewhat contracted between the seeds; arillar appendage small, pale, simply turgid. Figure 50.

A. pravissima.

Phyllodia beset with short hairlets.

Tall shrub; phyllodia rather inequilateral, almost dimidiate, mostly somewhat ovate-lanceolar, short-pointed, lined by one main-venule; stalks of the headlets beset with short hairlets; fruit comparatively broad, much compressed, straight; arillar appendage nearly as long as the seed. **A. vestita.**

919. Racemes of unexpanded flower-headlets enclosed in large petaloid scale-like bracts; seeds transverse.

Shrub, rather tall; branchlets prominently triangular; phyllodia straight, firm, from narrow- to elongate lanceolar, their lateral venules concealed; flowers pale-yellowish or almost whitish, few in each headlet; fruit from broad-oval to elliptical, strongly compressed; arillar appendage brownish-black, supporting only the base of the seed.

A. suaveolens.

Racemes without any conspicuous bracts; seeds longitudinal 920

920. Racemes of headlets often considerably longer than the phyllodia.

Shrub, rather tall; phyllodia firm, greyish-green, obliquely lanceolar- or elliptic-cuneate, inequilateral, short-pointed; racemes generally longer than the phyllodia; flowers usually few in each headlet; fruit much compressed, linear-elliptical, generally straight; seeds close along the anterior margin of the fruit; arillar appendage somewhat unilateral. **A. lunata.**

Racemes of headlets often about as long as or shorter than the phyllodia 921

921. Flowers rather few in each headlet.

Shrubby; phyllodia narrow- or elongate-lanceolar, slightly curved, provided at the upper edge and distant from the base with one or two or rarely three prominent glandules;

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flower-headlets small, in short racemes; fruit elliptic- or broad-linear, flat; valves thin; seeds almost completely surrounded in a double line by the dark-brown funicle.
A. amoena.

Flowers many in each headlet 922

922. Funicle bright-red.

Shrubby or finally arboreous; phyllodia of thick texture, from narrow-elliptical to elongate- or lanceolar-linear, dull-green, almost straight, blunt, their secondary venules faint; racemes short or sometimes reduced to two or solitary flower-headlets; fruit linear or narrow-elliptical, generally constricted between the seeds, its valves hard; funicle tortuous, clasping only the lower portion of the seed. **A. salicina.**

Funicle pale or less often brownish-black 923

923. Fruit broad.

Finally arboreous; phyllodia firm, from elliptic- to elongate-lanceolar, often curved, with an additional short main-venule diverging from the base to a marginal supra-basal gland; secondary venules pennately spreading; racemes sometimes paniculated; flower-stalks when young often densely invested with very short yellow hairlets; fruit straight, broad, flat, elongate-elliptical; funicle thick, from brown to almost black, half or rarely fully surrounding the seed. **A. penninervis.**

Fruit narrow 924

924. Funicle almost doubly surrounding the seed.

Finally arboreous, ever-flowering; branchlets acutely angular; phyllodia of rather thin texture, narrow- or linear-lanceolar, gently curved, their secondary venules faint; racemes short, not rarely paniculated; fruit elongate- and broad-linear, almost straight, much compressed; funicle black-brownish. **A. retinodes.**

Funicle short 925

925. Phyllodia broad.

Tall-shrubby or arboreous; branchlets almost cylindrical; phyllodia firm, from elliptic- to lanceolar-falcate or

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ocasionally some oblique-ovate, shining, their secondary venules pinnately spreading; rhachis of raceme robust; flower-headlets rather large; fruit elongated, broad-linear, much compressed, usually of equal breadth throughout; arillar appendage attenuated, hardly half as long as the seed. "Golden Wattle." **A. pycnantha.**

Phyllodia narrow.

Tall shrub; branchlets hardly angular; phyllodia from linear-spatular to narrowly elliptic-lanceolar, shining, rigid, rounded-blunt at the apex, their secondary venules concealed; racemes of headlets shorter than the phyllodia; fruit elongated, somewhat curved, much constricted between the seeds; arillar appendage much shorter than the seed. **A. hakeoides.**

926. **Flower-heads usually solitary or in pairs** 927

Flower-heads usually in short racemes 933

927. **Phyllodia long and narrow, generally lined with three primary venules** 928

Phyllodia short, lined with more than three primary venules 929

928. **Phyllodia rigid, their longitudinal venules strong and much emersed.**

Tall shrub; branchlets angular, beset with short hairlets; phyllodia straight, often blunt, from broad- to narrow-linear; flower-headlets occasionally few in corymbs, their stalks always invested with hairlets; fruit linear, straight, much compressed; arillar appendage very short. **A. elongata.**

Phyllodia flaccid, their longitudinal venules subtle and quite immersed.

Finally arboreous, somewhat sticky; branchlets slender; phyllodia from elongate-lanceolar to quite linear, acute, dotted by glandular pores; stalks of flower-headlets beset with short hairlets; fruit broad-linear, of equal width throughout; seeds shining, their arillar appendage pale, short, but enlarged by the folded and twisted funicle. **A. subporosa.**

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929. Longitudinal venules of the phyllodia immersed.

Shrub, from low to rather tall; branchlets often beset with a subtle almost mealy vestiture; phyllodia rigid, broad-linear, upwards still broader, minutely pointed, seldom much elongated; flower-headlets small, sometimes in a corymb; their stalks almost white-powdery invested with minute interwoven hairlets; fruit linear-cylindrical, generally arched-curved, somewhat contracted between the seeds; arillar appendage rather pale, short, but enlarged by the folded and twisted funicle.

A. farinosa.

Longitudinal venules of the phyllodia much emersed 930

930. Longitudinal venules of the phyllodia thin and numerous.

Tall shrub; phyllodia rigid, from broad-linear to narrow-lanceolar, usually somewhat curved, short-pointed; flower-headlets small, nearly sessile; fruit rather broad, glabrous, much curved or even spirally twisted; its valves hard; seeds shining; funicle short; arillar appendage orange-colored, unilaterally extending to about half the length of the seed. **A. Osswaldi.**

Venules of the phyllodia rather strong and few ... 931

931. Venules of the phyllodia scarcely anastomosing.

Shrub, rather low; phyllodia rigid, often rather short, from elliptic- to broad-linear, occasionally somewhat cuneate, minutely pointed; flower-headlets small, on short stalks; petals disconnected; fruit linear-cylindrical; its valves somewhat streaked outside; seeds shining; arillar appendage pale-brownish, extending only around the base of the seed. **A. sclerophylla.**

Venules of the phyllodia somewhat anastomosing ... 932

932. Phyllodia quite blunt.

Shrub, rather dwarf; branchlets angular, beset with minute hairlets; phyllodia rigid, almost elliptic-linear, but narrowed downward, somewhat curved; flower-headlets small, on short stalks; petals connected to about the middle; fruit unknown. **A. Whanii.**

Phyllodia sharp-pointed.

Shrub, rather tall; branchlets angular, densely beset with short hairlets; phyllodia rather rigid, mostly narrow-lanceolar; headlets of flowers on very short stalks;

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fruit rather long, comparatively narrow, flexuous, biconvex, beset with short hairlets; seeds small, turgid; arillar appendage short, pale, thick.

A. lanigera.

933. Phyllodia with three longitudinal venules.

Shrub, finally tall; phyllodia grey-green, rigid, straight, often narrowly cuneate-elliptical; primary venules very prominent; secondary venules thin, spreading; flower-headlets somewhat sticky, in very short racemes; fruit small, broadly linear-cylindrical, pointed; arillar appendage extending only around the lowest portion of the seed.

A. trineura.

Phyllodia with more than three longitudinal venules 934

934. Primary venules of the phyllodia extremely thin.

Finally arboreous; phyllodia rather long, rigid, from linear- to narrow-lanceolar, often somewhat curved, short-pointed, generally greyish from almost imperceptible hairlets; racemes very short, sometimes reduced to two or solitary headlets; stalks of the latter short; fruit narrow, gently curved, somewhat constricted between the seeds; funicle replicated below the short pale arillar appendage.

A. homalophylla.

Primary venules of the phyllodia prominent 935

935. Phyllodia very long, but comparatively narrow.

Tall-arboreous; phyllodia rigid, straight or slightly curved, closely and almost equally streaked by longitudinal venules; racemes short, seldom reduced to two or solitary flower-headlets; stalks of the latter rather long, beset with appressed hairlets; fruit hard, often much elongated, rather broad, constricted between the seeds, very tardily dehiscent; funicle slightly or hardly dilated into an arillar appendage. **A. stenophylla.**

Phyllodia rather broad, mostly curved- and elliptic- or elongate-lanceolar 936

936. Funicle bright-red, doubly surrounding the seed.

Arboreous, occasionally very tall; branchlets somewhat angular; phyllodia sometimes narrow-lanceolar and almost straight, without any lustre, their copious secondary venules reticular-connected; racemes short, seldom reduced to two or solitary flower-headlets; the latter pale-yellow, their stalks rather short; fruit compressed, arched-curved or tortuous, rather narrow. "Blackwood-tree." **A. Melanoxylon.**

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Funicle pale, repeatedly twisted beneath the base of the seed.

Arboreous, finally tall; branchlets scarcely angular; phyllodia generally elongated- and narrow-lanceolar, also often conspicuously curved, their secondary venules scantily reticular-connected; racemes of flower-headlets short, sometimes compound; stalks of flower-headlets rather long and slender; fruit arched- or cyclic-curved or irregularly flexuous, rather narrow, bi-convex, slightly constricted between the seeds. **A. implexa.**

937. **Phyllodia short, narrow, pungent-pointed** 938

Phyllodia elongated or broad, hardly pointed ... 939

938. **Phyllodia mostly whorled and acicular-linear.**

Shrubby or somewhat arborescent; phyllodia spreading, sessile, rarely from linear- to ovate-lanceolar, and then lined by two or three venules; calyx and corolla four-lobed; spikes densely cylindrical, seldom ovate; fruit broad-linear, compressed; arillar appendage rather pale, short, supporting only the base of the seed.
A. verticillata.

Phyllodia mostly scattered, from a roundish base narrow-lanceolar.

Shrub, sometimes tall; stipules short, pungent; phyllodia very spreading, sessile, lined by three or four venules; spikes densely cylindrical; calyx and corolla four-lobed; fruit broad-linear, compressed; arillar appendage pale, short, supporting only the base of the seed.
A. Oxycedrus.

939. **Primary venules of the phyllodia few, prominent** ... 940

Primary venules of the phyllodia numerous, thin ... 943

940. **Phyllodia only twice as long as broad or still shorter.**

Sub-alpine shrub, from low to rather tall; branchlets acutely bi-angular; phyllodia very firm, inequilateral, from cuneate- to orbicular-obovate; primary venules two to four; secondary venules thin, reticular-joined; spikes very short, solitary or two or three together; the individual flowers never numerous, but at a distance from each other; calyx and corolla generally four-lobed; fruit linear-cylindrical, arched-curved; arillar appendage pale, short, supporting only the base of the seed.
A. alpina.

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Phyllodia usually several times or many times longer than broad **941**

941. Flowers crowded in the spikes.

Tall highland-shrub, finally arborescent; phyllodia very firm, elongate-lanceolar, somewhat curved; primary venules two to four; secondary venules closely reticular-joined; spikes rather long, solitary or two together; calyx and corolla generally four-lobed; fruit long, very narrow, constricted between the seeds; arillar appendage pale, short, supporting only the base of the seed.

A. Dallachiana.

Flowers at a distance from each other in the spikes **942**

942. Phyllodia elliptic-lanceolar, generally with several prominent longitudinal venules.

Shrubby or arborescent, on the coast producing copiously suckers; branchlets very angular; phyllodia firm, almost straight; two or three of the primary venules more prominent; secondary venules distantly reticular-joined; calyx and corolla generally four-lobed; fruit linear-cylindrical; arillar appendage pale, short. **A. longifolia.**

Phyllodia broad-linear, generally with only one prominent longitudinal venule.

Shrub, often tall; branchlets angular; phyllodia very long, rather flaccid; secondary venules almost obliterated; calyx and corolla generally four-lobed; fruit almost straight, linear-cylindrical; arillar appendage pale, short.

A. linearis.

943. Phyllodia straight **944**

Phyllodia curved **945**

944. Phyllodia from broad-linear to compressed-cylindrical.

Shrubby or finally somewhat arborescent; phyllodia rigid, greyish from appressed minute hairlets, subtle-streaked from faint longitudinal venules; flower-spikes rather dense and short; fruit quite flat, from oblique-ovate to almost elliptical, its valves thin; seeds placed oblique-transversely, much shorter than the width of the pericarp; arillar appendage short, pointed, pale. "Mulga."

A. aneura.

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Phyllodia usually lanceolar.

Tall shrub; phyllodia firm, narrow-lanceolar, the middle venule prominent, the other longitudinal venules very close and immersed; spikes rather short, dense, solitary or two together; fruit unknown. **A. subtilinervis.**

945. Phyllodia lanceolar- or broad-linear, much elongated, the middle venule more prominent than the others.

Tall-shrubby or finally arboreous; phyllodia rigid, nearly or quite glabrous, closely streaked by thin longitudinal venules; spikes solitary or two or few together, dense; fruit linear-cylindrical, somewhat flexuous; seeds small, black, shining, ellipsoid; arillar appendage short, pale, touching only the base of the seed. **A. Doratoxylon.**

Phyllodia elongate- or narrow-lanceolar; three to five of their numerous longitudinal venules more prominent than the others.

Arboreous, finally tall; phyllodia large, often closely invested with minute greyish or at first yellowish hairlets; spikes solitary or two or few together; calyx invested with short hairlets; fruit narrow, irregularly twisted or somewhat coiled; seeds small, ellipsoid, black, shining; arillar appendage pale, clasping the lower portion of the seed, somewhat lengthened downward.

A. glaucescens.

946. Headlets of flowers solitary.

Shrubby, seldom tall; branchlets beset with soft hairlets; pinnae generally in two pairs; leaflets two- to six-paired, very small, from lanceolar- to obovate-elliptical, flat; headlets of flowers conspicuously stalked; fruit broad- or elliptic-linear, compressed; arillar appendage pale, pointed, about half as long as the seed. Figure 51.

A. Mitchelli.

Headlets of flowers in simple or oftener in paniculated racemes 947

947. Pinnae usually in few pairs.

Tall-shrubby or arboreous; leaflets in several or many pairs, rather small, somewhat rigid, from ovate- to elliptic-lanceolar, much paler beneath; flowers several in each headlet; fruit narrowly elongate-elliptical, flat; arillar appendage pale, pointed, about half as long as the seed.

A. discolor.

Pinnae usually in many pairs... 948

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948. Leaflets slightly distant, many times longer than broad.

Arboreous, sometimes tall, flowering later than A. dealbata and earlier than A. mollissima; decurrent angles from the base of the leafstalks along the branchlets extremely prominent; foliage scantily beset with hairlets; leaflets cylindric-linear, blunt, forming numerous pairs in each pinnule; fruit strongly compressed, rather narrow, much constricted between the seeds; arillar appendage pale, much shorter than the seed. "Sydney-Wattle." **A. decurrens.**

Leaflets closely approximated, several times longer than broad 949

949. Fruit rather narrow, much constricted between the seeds.

Arboreous, sometimes very tall; decurrent angles from the leafstalks somewhat prominent; foliage at first yellowish, soon greyish from subtle vestiture; pinnules in several or many pairs; leaflets very short, linear, forming numerous pairs in each pinnule; flower-headlets usually pale-yellow; fruit ripening very tardily; seeds shorter than those of A. dealbata, also rounder and less compressed, their arillar appendage also proportionately shorter. "Black Wattle." **A. mollissima.**

Fruit rather broadish, hardly constricted between the seeds.

Arboreous, sometimes very tall; decurrent angles from the base of the leafstalks somewhat prominent; foliage at first whitish, soon greyish from subtle vestiture; pinnules in several or many pairs; leaflets very short, linear, forming numerous pairs in each pinnule; flower-headlets usually bright-yellow; fruit broad-linear; arillar appendage pale, much attenuated. ("Silver-Wattle.") **A. dealbata.**

CASSIA.

950. Leaflets recurved at the margin.

A shrub, rather tall; branchlets angular; leaflets in several or many pairs, dark-green above, pale beneath, from linear-lanceolar to oval-elliptical, a stalked glandule between each or only the lowest pair; umbels few-flowered; petals yellow; stamens ten; filaments very short; anthers almost equal; fruit broad-linear, flat; pericarp thin; seeds black, shining, placed obliquely. **C. Australis.**

Leaflets incurved at the margin or flat or undeveloped 951

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951. Leaf-stalk and rhachis quite narrow 952

Leaf-stalk and rhachis dilated, their anterior edge turned towards the branchlet 954

952. Leaflets flat.

Shrubby, rather tall; leaflets usually in one to three pairs, from broadly obovate to almost elliptical, dull-green on both sides, soon glabrous; glandules depressed, solitary between each pair of leaflets; flowers in very short racemes or corymbs; petals yellow; stamens ten; lowest anthers slightly larger; fruit broadish, flat; pericarp thin; seeds dark-brown, placed transversely. **C. desolata.**

Leaflets concave or quite channelled 953

953. Leaflets from lanceolar- to linear-elliptical, somewhat concave.

Shrubby, rather tall; leaflets dull-green on both sides, usually in three to five pairs, often beset with very short greyish hairlets; glandule between the lowest leaflets depressed; flowers in very short racemes or corymbs; petals yellow; fruit broadish, flat, rounded-blunt; pericarp thin; seeds dark-brown, placed transversely. **C. Sturtii.**

Leaflets cylindrical- or channelled-linear.

Shrubby, from rather dwarf to tall; leaflets in few or several pairs, densely beset with very short greyish or whitish hairlets; glandule between the lowest leaflets depressed; flowers in very short racemes or corymbs; petals yellow; stamens ten, the two or three lowest longer than the others; fruit flat, rather broadish; seeds dark-brown, placed transversely. **C. artemisioides.**

954. Leaflets developed.

Shrubby, rather tall; leaf-stalk continuous with the dilated rachis, placed somewhat vertically, the anterior edge turned towards the branchlet; leaflets in one or two pairs, somewhat long, almost linear, channelled, scantily beset with hairlets or almost glabrous; glandule between the lowest leaflets depressed; flowers in short racemes or corymbs; petals yellow; the two or three lowest stamens slightly longer; fruit flat, rather narrow; seeds dark-brown, placed transversely. Figure 49.

C. eremophila.

Leaflets usually undeveloped.

Shrubby, rather tall; leaf-stalks from elliptical-lanceolar to broad-linear, narrowed downward, the anterior edge

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turned towards the branchlet, closely beset with very short appressed often shining hairlets; glandule absent or inconspicuous; flowers in very short racemes or corymbs; petals yellow; fruit flat, rather broadish; seeds dark-brown, placed transversely.

C. phyllodinea.

JACKSONIA.

955. Thornless.

A tall shrub, quite leafless; branchlets angular; flowers in racemes, comparatively large; calyx glabrous; petals yellow; fruit on a short stipes, almost elliptical, compressed. **J. Clarkei.**

GOMPHOLOBIUM.

956. Erect.

Tall, glabrous; leaflets ternate, elongated, from lanceolar- to broad-linear, more narrowed downward, flat or somewhat recurved at the margin; flowers large, solitary; stalklets longer than the flowers; lower petals bearded at the margin; fruits almost ovate. **G. latifolium.**

Depressed 957

957. Lower petals short-bearded at the anterior margin.

Glabrous, or somewhat beset with hairlets; leaflets ternate, rather short, from elliptic-cuneate to linear, their margin generally recurved; flowers of moderate size, solitary or two or three together; stalklets longer than the flowers; fruit almost ovate. **G. Huegelii.**

Lower petals quite glabrous.

Leaflets ternate, rather short, from broad- to acicular-linear, revolute at the margin; flowers rather small, generally two or three together; stalklets shorter than the flowers; fruit short-exserted. **G. minus.**

MIRBELIA.

958. Leaves very small, mostly in whorls of three.

Erect shrub, finally tall, much beset with minute appressed hairlets; leaves from broad- to lanceolar-ovate, slightly pointed, recurved at the margin; flowers small, mostly terminal and few together, on very short stalklets; upper and lateral petals upwards yellow or orange-colored; lower petals black-purplish or red upwards; fruit ovate, depressed, small. Figure 45. **M. oxylobioides.**

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OXYLOBIUM.

959. Leaves indented or incised.

Erect, shrubby; leaves opposite, from deltoid-ovate to rhomboid-lanceolar, with pungent lobes or denticulations, flat, generally glabrous; racemes rather elongated; fruit ellipsoid-cylindrical, attenuated into a conspicuous stalk-like base. **O. trilobatum.**

Leaves entire **960**

960. Prostrate, semi-herbaceous.

Sometimes ascendant, scarcely half-shrubby; leaves opposite or in whorls of three, from ovate to lanceolar, pungent-pointed, soon glabrous, almost flat; flowers few, in umbel-like racemes; calyx scantily beset with hairlets; fruit almost sessile, rather blunt. **O. procumbens.**

Erect or diffuse, shrubby **961**

961. Leaves soon glabrous.

Erect or diffuse; leaves opposite or in whorls of three, from elliptical to lanceolar, sharp-pointed, recurved at the margin; stipules conspicuous, pointed; flowers few, in umbel-like racemes; calyx beset with short hairlets; fruit almost sessile, acute. **O. alpestre.**

Leaves beset underneath with often appressed and shining hairlets.

Erect or seldom diffuse; leaves in whorls of three, from oval- to narrow-elliptical, recurved at the margin; stipules inconspicuous; flowers several, in short racemes; calyx densely beset with soft hairlets outside; fruit pointed, almost sessile, glabrous. **O. ellipticum.**

SPHAEROLOBIUM.

962. Tube of the calyx about as long as the upper lobes.

Never tall, always glabrous, almost leafless or the leaves scanty small and narrow; branches slender, cylindrical; flowers small, in irregular almost spike-like racemes; calyx soon dark-colored; fruit small. **S. vimineum.**

VIMINARIA.

963. Flowers in spike-like racemes.

Glabrous; branchlets weak; leaves seldom developed, but when present consisting of one to three rather large leaflets, these from oval- to elliptic-lanceolar in form; racemes generally elongated; bracts minute. **V. denudata.**

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DAVIESIA.

964. **Leaves flat** 965

Leaves cylindrical 969

965. **Leaves vertical, broadly decurrent.**

A rather small glabrous shrub; leaves rigid, almost semi-lanceolar, pungent, very spreading, adnate with broad base, thickened along the upper margin, often curved; flowers in corymbous clusters or sometimes only two together or solitary; fruit much compressed, almost dimidiately rhomboid-cordate. **D. pectinata.**

Leaves horizontal, simply sessile 966

966. **Leaves usually very broad.**

A tall glabrous shrub, pervaded by a bitter principle; leaves usually very large, shining, from almost broad-lanceolar to ovate-orbicular or sometimes smaller and roundish-cordate; the secondary venules largely reticular-prominent; flowers often in elongated racemes; fruit much compressed, almost dimidiate-cordate. **D. latifolia.**

Leaves usually narrow 967

967. **Leaves always exceedingly elongated, without any lustre.**

Tall, glabrous shrub; branchlets acutely triangular; leaves rigid, straight, broad-linear, gradually attenuated into the sessile base and the apex, their primary venule very prominent, their secondary venules concealed; umbels few-flowered, conspicuously stalked, solitary or two or three together; stalklets longer than the calyx; upper lobes of the calyx disconnected; fruit much compressed. **D. Wyattiana.**

Leaves very short or somewhat elongated, shining ... 968

968. **Leaves usually many times longer than broad, slightly pointed.**

A glabrous shrub, from somewhat dwarf to tall; leaves usually rather long, sometimes much elongated, from broad-linear to narrow-lanceolar, rigid, the secondary venules somewhat prominent; flowers generally several in each axillary corymb; calyx minutely lobed; fruit much compressed. **D. corymbosa.**

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Leaves usually several times longer than broad, pungent-pointed.

A rather small somewhat spinescent shrub; branchlets not rarely beset with hairlets; leaves usually quite short, from often linear to lanceolar-ovate and even rhomboid-orbicular, horizontally somewhat spreading, their margin prominent and sometimes slightly recurved; flowers axillary, solitary or two or few together, their stalks and stalklets usually very short; calyx conspicuously lobed; fruit much compressed, sharply pointed. **D. ulicina.**

969. Leaves articulated on the branchlets.

A small glabrous shrub; leaves short, straight, acicular-cylindrical or occasionally somewhat vertical-compressed; flowers axillary, few or several together, somewhat racemous, on very short stalklets; calyx much narrowed at the base, minutely lobed; fruit considerably compressed. **D. genistifolia.**

Leaves continuous with the branchlets.

A small spinescent glabrous shrub; branchlets somewhat flexuous, slightly streaked; leaves phyllodinous, short, conic-cylindrical, thornlike-pungent, usually somewhat recurved, without any articulation emanating from the branchlets; flowers axillary, few or sometimes only two together, seldom solitary, always on very short stalks and stalklets; petals usually reddish; fruit rather large, very turgid, its blunt lateral angle nearly as high as the pointed terminal angle. **D. brevifolia.**

EUTAXIA.

970. Fruit turgid, attenuated into a stalk-like base.

A small almost glabrous shrub, occasionally quite dwarf, sometimes spinescent; leaves small, from oval to linear, somewhat concave; flowers small, axillary, on short stalklets; bracteoles linear, somewhat removed from the calyx; fruit beset with hairlets. **E. empetrifolia.**

PULTENAEA.

971. Petals all pink.

Shrubby, from dwarf to rather tall; leaves rigid, linear-cylindrical, channelled above, somewhat granular-rough; flowers in terminal headlets; bracteoles inserted at the base of the calyx, short, linear-lanceolar; calyx outside

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invested with appressed shining hairlets, its lobes rather acute; fruit oblique-ovate, pointed, somewhat turgid, beset with hairlets. Figure 46. **P. rosea.**

Petals yellowish or partly brownish- or dark-reddish 972

972. Flowers axillary-scattered or crowded into almost terminal but leafy clusters (Exception: some forms of P. canaliculata)... 973

Flowers terminal, in leafless headlets, or when solitary surrounded by numerous bracts 986

973. Leaves ternately whorled 974

Leaves scattered, rarely some opposite or ternate ... 975

974. Leaves very small.

An alpine plant, prostrate, somewhat beset with shining appressed hairlets; leaves elliptic-linear and rather cuneate, incurved at the margin; flower-stalklets generally longer than the leaves; bracteoles inserted at the base of the calyx; upper lobes of the calyx much broader than the lower; fruit much compressed, almost orbicular, sessile within the calyx. **P. tenella.**

Leaves rather large.

An erect shrub, hardly tall; leaves generally greyish-green and glabrous, flat, from rhomboid-cuneate or almost fan-shaped to nearly cordate or orbicular or ovate, almost pungently pointed; flowers comparatively large, on conspicuous stalklets, often ternate-axillary at the whorls; bracteoles inserted at the base of the calyx, very narrow, acutely pointed; upper lobes of the calyx much broader than the lower; fruit turgid, oblique-ovate, acute, glabrous, sessile within the calyx; seeds black, without any lustre. **P. ternata.**

975. Leaves incurved at the margin 976

Leaves recurved at the margin 985

976. Erect or diffuse 977

Prostrate 984

977. Leaves pungently pointed 978

Leaves blunt or slightly pointed 979

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978. Bracteoles acicular-linear, inserted above the base of the calyx.

A rather dwarf shrub; leaves sessile, from almost ovate- to broad-lanceolar, sometimes ternately whorled, generally beset with soft hairlets, the upper end often somewhat recurved; flowers on short stalklets; bracts very numerous and acute; upper lobes of the calyx much broader than the lower; fruit turgid, oblique-ovate, scantily beset with hairlets. **P. styphelioides.**

Bracteoles lanceolar, inserted below the base of the calyx.

A shrub, finally tall; leaves spreading, rigid, short-stalked, mostly straight, from aciculate-linear to narrow-lanceolar or sometimes ovate or cordate towards the base, concave above, darker green beneath, often glabrous; flowers either few together in leafy terminal headlets or some axillary near the summit of branchlets; fruit ovate, acute, somewhat compressed, beset with hairlets; seeds dark-brown. **P. juniperina.**

979. Bracteoles inserted below the base of the calyx.

A diffuse shrub; branchlets invested with soft hairlets; leaves very small, rigid, from orbicular- to elliptic-obovate, somewhat concave, slightly arched, soon glabrous, shining above, their secondary venules pinnately prominent beneath; stipules broad, the upper overlapping, pale-brownish, fringed; flowers axillary, solitary, but crowded into almost terminal leafy clusters; bracteoles membranous, inserted close under the calyx, broad, pale; calyx membranous, its lobes almost equal and much pointed; fruit oblique-ovate, turgid, somewhat beset with hairlets, sessile within the calyx. **P. densifolia.**

Bracteoles inserted above the base of the calyx ... 980

980. Flowers distinctly stalked.

A rather tall shrub, much beset with soft hairlets; leaves rather small, from obovate- to cuneate- or linear-elliptical, apt to turn brownish underneath, concave and glabrous above; flowers axillary and solitary, but also occasionally forming short leafy racemes; bracteoles quite narrow, greenish; lobes of the calyx pointed, hardly longer than the tube; petals all equally yellow; fruit short, oblique-ovate, sessile within the calyx. **P. villosa.**

Flowers almost sessile 981

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981. Flowers in leafless clusters, but only few in each.

A spreading shrub, much invested with silvery shining appressed hairlets; leaves rather small, firm, from almost obcordate- to linear-cuneate, usually glabrous above; flower-clusters axillary and terminal; bracteoles inserted far above the base of the calyx; lobes of the calyx hardly as long as the tube, the two upper broadest; fruit oblique-ovate, acute, somewhat compressed.

P. largiflorens.

Flowers in leafy clusters or singly scattered 982

982. United upper lobes of the calyx much longer than the lower.

Half-shrub, usually dwarf, much beset with spreading soft hairlets; leaves rather small, from linear- to lanceolar-elliptical, concave above, darker green underneath; flowers singly axillary, but crowded into leafy spikes; bracteoles narrow, inserted near the base of the calyx; lobes of the calyx pointed; fruit scantily beset with hairlets.

P. humilis.

United upper lobes of the calyx hardly longer than the lower 983

983. Lobes of the calyx much pointed and longer than the tube.

A rather small shrub, much beset with greyish appressed hairlets; leaves quite small, from obovate- to linear-cuneate, exceptionally linear-cylindrical, darker green underneath, always concave above, soon glabrous; flowers small, few in the upper axils; bracteoles very narrow, inserted somewhat above the base of the calyx; fruit beset with hairlets. **P. parviflora.**

Lobes of the calyx scarcely pointed and about as long as the tube.

A rather dwarf shrub, much invested with soft brownish hairlets; leaves minute, from ovate to elliptical, concave above, darker green underneath, their upper end recurved; flowers solitary in the upper axils; bracteoles small, greenish, inserted above the base of the calyx; lobes of the calyx broadish; fruit turgid, blunt, very small.

P. foliolosa.

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984. Leaves and bracteoles very acute.

An alpine plant, much invested with appressed and almost silver-shining hairlets; leaves small, linear-cylindrical, channelled, pointed; flowers solitary, axillary, almost sessile; bracteoles small, as well as the calyx-lobes long-pointed, inserted at the base of the calyx; fruit oblique-ovate, much compressed, acute, about as long as the calyx. **P. fasciculata.**

Leaves and bracteoles almost obtuse.

A small half-shrub, chiefly maritime, beset with short hairlets; leaves small, usually linear-cylindrical, channelled; flowers comparatively small, mostly scattered, often singly terminal, sessile, surpassed by the surrounding leaves; bracts exceeding the calyx; bracteoles almost elliptical, inserted below the calyx; calyx-lobes nearly equal, much pointed; fruit small, oblique-ovate. **P. tenuifolia.**

985. Flowers on much elongated stalklets.

Prostrate, somewhat beset with short hairlets; leaves small, spreading, from linear- to elliptic-lanceolar; stalklets solitary, almost capillary; bracteoles linear, inserted at the base of the calyx; lobes of the calyx all acute; fruit turgid. **P. pedunculata.**

Flowers sessile.

An erect shrub, much beset with short hairlets; leaves from ovate- to cuneate-obcordate, shortly bilobed or truncate; flowers mostly terminal in small headlets; bracteoles linear-lanceolar, inserted on the tube of the calyx, above its base; fruit beset with hairlets; arillar appendage of the seeds slightly fringed. **P. scabra.**

986. Leaves flat or recurved at the margin 987

Leaves incurved at the margin 993

987. Leaves nearly or quite flat 988

Leaves recurved at the margin 990

988. Leaves always glabrous on both sides.

An erect shrub, never tall; leaves rather small, rigid, linear-cuneate, usually notched at the summit, never pointed; headlets small, with few flowers in each; bracteoles very narrow, inserted on the tube of the

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calyx above its base; calyx invested with appressed shining hairlets, its tube longer than the lobes; fruit rhomboid-ovate, considerably compressed, beset with hairlets. **P. retusa.**

Leaves mostly invested underneath with appressed shining hairlets 989

989. Flowers in large headlets.

A robust shrub, finally tall; leaves comparatively large, rigid, from elliptic-cuneate to obcordate, somewhat pointed, in age not rarely quite glabrous; bracteoles inserted far above the base of the calyx, very narrow; calyx invested outside with silver-shining hairlets, its lobes shorter than the tube; lower petals upwards dark-colored; fruit oblique-ovate, much compressed, well pointed. **P. daphnoides.**

Flowers in small headlets.

An imperfectly shrubby plant, usually erect and slender; leaves comparatively small, from elliptic- to cuneate-obovate, slightly pointed, sometimes totally glabrous in age; bracteoles inserted much above the base of the calyx-tube; calyx outside invested with shining short hairlets, its lobes pointed, shorter than the tube; lower petals dark-purplish upwards; fruit rhomboid-ovate, beset with appressed hairlets. **P. stricta.**

990. Leaves blunt.

A rather robust shrub, from low to somewhat tall; leaves small but firm, from elliptic- to broad-ovate or sometimes linear-elliptical, always convex, usually beset with minute greyish hairlets underneath; flowers in generally small headlets; bracteoles very short, inserted on the tube of the calyx above its base; calyx invested with short hairlets, its lobes rather equal, about as long as the tube; lower petals dark-purplish upwards; fruit oblique-ovate, pointed, much compressed. **P. Gunnii.**

Leaves pointed 991

991. Branchlets largely enveloped by the much elongated pale stipules.

An imperfectly shrubby plant, flowering already at some inches height; leaves from lanceolar- to broad-linear, at the margin revolute, glabrous above; stipules appressed, membranous; flowers in small terminal headlets; bracts

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concealing the calyces; bracteoles long, narrow-lanceolar and somewhat navicular, inserted on the calyx-tube above its base; calyx invested outside with appressed silver-shining hairlets, its lobes about as long as the tube; fruit much compressed, pointed, densely beset with silky-shining hairlets. **P. paleacea.**

Branchlets slightly enveloped by the brownish stipules 992

992. Leaves rather flaccid.

A rather low shrub, much beset with scattered spreading soft hairlets; leaves of thin texture, from ovate- to elliptic-lanceolar, often almost flat, terminating in a bristlet; stipules high-connected, capillary pointed; flowers in dense headlets, each provided with a short stalklet; bracteoles very narrow, inserted above the base of the calyx; lobes of the calyx thinly pointed; fruit very acute. **P. mucronata.**

Leaves quite rigid.

A robust shrub; leaves very firm, from linear- to lanceolar-elliptical, often sharp-pointed, mostly invested underneath with appressed silver-shining hairlets; flowers rather large, few in each headlet; bracteoles navicular-lanceolar, inserted on the tube of the calyx; lobes of the calyx considerably shorter than the tube; the whole calyx outside invested with silver-shining hairlets as well as the outside of the ovulary; seeds almost black, oblique-ellipsoid, shining, smooth; arillar appendage pale, lobular-crisped. **P. Benthami.**

993. Flowers solitary, but terminal 994

Flowers in clusters or spikes 995

994. Erect.

A rather tall shrub, mainly sub-alpine, somewhat beset with shining hairlets; leaves rather small, from lanceolar to linear, channelled, almost pungently pointed, often lined with three prominent venules, glabrous above; stipules rather elongated; each flower surrounded by bracts; bracteoles ovate-elliptical, nearly as long as the calyx and inserted below its base; lobes of the calyx pointed; fruit oblique-ovate, somewhat turgid. **P. Muelleri.**

Prostrate.

Much beset with silver-shining short hairlets; leaves linear-cylindrical, blunt, quite small, channelled; stipules very

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small; each flower surrounded by bracts; bracteoles ovate-elliptical, inserted near the base of the calyx; lobes of the calyx shorter than the tube, the whole calyx invested outside with silky-shining hairlets; fruit oblique-ovate, blunt. **P. prostrata.**

995. Stalklets about as long as the calyx.

Prostrate, somewhat beset with appressed shining hairlets; leaves small, linear, blunt, channelled above; flowers in terminal leafy clusters; bracteoles linear-lanceolar, inserted at the base of the calyx; lobes of the calyx very acute; lower petals deeply colored; fruit beset with hairlets. **P. laxiflora.**

Stalklets shorter than the calyx 996

996. Almost entirely glabrous.

Tall-shrubby or somewhat arborescent; leaves rather small, from elliptic- to almost cuneate-linear, blunt or slightly pointed, concave; flowers small, either in terminal almost leafless corymbs or dispersed in the upper axils; bracts minute; bracteoles small, lanceolar-ovate, at the base of the calyx; lobes of the calyx hardly or slightly pointed; fruit nearly glabrous, oblique-ovate, rather turgid, short-pointed. (P. altissima.) **P. flexilis.**

Much beset with hairlets 997

997. Flowers few, rather large, either loosely placed into headlets or scattered, generally surpassed by the floral leaves 998

Flowers many, usually small, crowded into headlets, generally surpassing the floral leaves 1001

998. Flowers in leafy spikes or headlets.

A low imperfectly shrubby plant, quite densely beset with minute hairlets; leaves broadish- or linear-cylindrical, blunt, channelled, their surface often closed by the incurved margin; bracts none; bracteoles almost as long as the calyx and inserted below its base, extremely narrow; calyx membranous, pale, its lobes much pointed, hardly longer than the tube; lower petals dark-colored; fruit oblique-elliptical, acute, shorter than the calyx; seeds somewhat shining. **P. canaliculata.**

Flowers in terminal leafless headlets 999

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999. Bracteoles fixed above the base of the calyx.

Erect, rather tall, beset with soft spreading hairlets; leaves linear-cylindrical, scarcely pointed, their surface often closed by the incurved margin; flowers without any stalklets; bracteoles narrow, keeled; calyx-lobes broadish, nearly equal, hardly as long as the tube; ovulary outside beset with hairlets. **P. mollis.**

Bracteoles fixed below the base of the calyx ... 1000

1000. Surface of the leaves closed by the incurved margin.

A small diffuse shrub, much beset with soft hairlets; leaves linear-cylindrical; flowers on short stalklets; bracteoles fully as long as the calyx, linear-lanceolar; calyx membranous, scantily beset with hairlets, its lobes pointed; fruit oblique-elliptical, short-pointed, somewhat compressed, bearing scattered hairlets. **P. hibbertioides.**

Surface of the leaves open.

A rather tall shrub, much beset with soft hairlets; leaves linear, concave, rather acute; stipules recurved; flowers on very short stalklets; bracteoles comparatively large, almost lanceolar; calyx beset with rather long hairlets, its lobes about as long as the tube; fruit oblique-ovate, pointed. **P. viscosa.**

1001. Stipules distinctly present.

A slender imperfectly shrubby plant; leaves comparatively short, glabrous, from broadish- to elliptic- and cylindric-linear, always concave, rather acute; stipules very short; flowers quite small, in dense terminal headlets; bracts broadish, overlapping; bracteoles about as long as the calyx, inserted above its base, often bifid and with a bristlet between the lobes, sometimes at the summit additionally denticulated or lobulated; calyx beset with very short appressed shining hairlets; fruit oblique-ovate, pointed, somewhat compressed, invested with appressed hairlets; seeds dark-brown. **P. dentata.**

Stipules almost absent.

A rather low imperfectly shrubby plant; leaves small, from linear- to narrow-elliptical, rather blunt, usually glabrous, concave above or sometimes flat, darker green beneath, without any prominent carinular venule; stipules triangular, very minute or obliterated; flowers often somewhat fascicular-umbellate in the headlets; bracteoles inserted below the calyx; calyx beset with soft hairlets, its lobes shorter than the tube; upper petal only moderately dilated; fruit ovate-globular, beset with hairlets. **P. subumbellata.**

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PHYLLOTA.

1002. Flowers singly sessile within tufts of terminal leaves.

A small shrub, much beset with soft hairlets; leaves small, recurved-spreading, linear, generally pointed, refracted at the margin; flowers shorter than the leaves; bracteoles ovate, shorter than the tube of the calyx; the latter invested with shining appressed hairlets outside; fruit ovate, slightly compressed, enclosed.

P. pleurandroides.

DILLWYNIA.

1003. Calyx gradually attenuated at the base 1004

Calyx bluntish at the base 1006

1004. Lower petals pointed, nearly as long as the lateral petals.

A small shrub, much beset with short spreading hairlets; leaves short, spreading, linear-cylindrical, almost blunt; corymbs long-stalked; upper lobes of calyx much disconnected; petals orange-colored and reddish, early deciduous, the lamina of the upper petal much broader than long; fruit almost globular. **D. hispida.**

Lower petals blunt, shorter than the lateral petals... 1005

1005. Flowers mostly terminal.

A thin-branched shrub, seldom tall; leaves small, slender, linear-cylindrical, blunt or slightly pointed, with a furrow along the upper side; flowers in usually sessile corymbs or clusters; upper lobes of calyx much disconnected; petals early deciduous; the lamina of the upper petal much broader than long; fruit globular-ovate.

D. ericifolia.

Flowers mostly axillary.

A thin-branched shrub, often rather tall; leaves small, linear-cylindrical, blunt or slightly pointed, with a furrow along the upper side; flowers solitary or two or three together, sometimes forming leafy racemes; upper lobes of calyx much disconnected; petals early deciduous; the lamina of the upper petal much broader than long; fruit almost enclosed. **D. floribunda.**

1006. Leaves pungent.

A thin-branched shrub, seldom tall; leaves rigid, acicular-linear, keeled; flowers mostly terminal, in almost sessile corymbs; upper lobes of calyx much connected; petals long persistent; lamina of the upper petal somewhat broader than long. **D. juniperina.**

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Leaves almost blunt 1007

1007. Flowers several in the corymbs.

A slender shrub, never tall; leaves rather short, thinly linear-cylindrical, blunt or hardly pointed; flowers small, mostly terminal, crowded into leafy capitular sessile corymbs; upper lobes of calyx much connected; petals long persistent; lamina of the upper petals somewhat broader than long; fruit almost ovate, partly exserted. **D. cinerascens.**

Flowers few in the corymbs or some solitary.

A small, diffuse shrub; leaves much spreading or deflexed, very short, linear-cylindrical, somewhat channelled, hardly pointed; flowers mostly terminal, few or several together; upper lobes of calyx much connected; petals long persistent; fruit ovate-globular, with a short stalk-like base. **D. patula.**

AOTUS.

1008. Leaves from narrow-lanceolar to linear, almost blunt or slightly pointed.

A shrub, from rather dwarf to somewhat tall, much beset with short hairlets; leaves from quinary to ternately whorled or two together or oftener scattered, repressed at the margin; flowers axillary, either solitary or two or three together, frequently forming spike-like leafy racemes; lobes of the calyx about as long as the tube; fruit quite small, globular-ovate, somewhat turgid, much exserted, its base stalk-like. **A. villosa.**

HOVEA.

1009. Prostrate or ascendant.

Semi-herbaceous; lower leaves almost ovate, upper from lanceolar to broad-linear, slightly beset with hairlets underneath, generally somewhat recurved at the margin; fruit from almost transversely oval to oblique-roundish, nearly glabrous, devoid of any stalk-like base. **H. heterophylla.**

Quite erect.

Tall-shrubby; leaves very firm, from narrow-elliptical or lanceolar to broad-linear, often closely invested with short brown hairlets underneath, flat or recurved at the margin; fruit obliquely or transversely roundish-ovate, quite densely beset with very short brownish hairlets, devoid of any stalk-like base. **H. longifolia.**

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TEMPLETONIA.

1010. Dwarf, leafy.

Glabrous; leaves distant, very firm, from narrow-elliptical to linear, flat or somewhat channelled; flowers small; petals yellowish; fruit elongate-elliptical, conspicuously stipitate, slightly turgid, generally few-seeded.

T. Muelleri.

Tall, leafless 1011

1011. Branchlets thinly cylindrical.

Glabrous; branchlets hardly spreading, furrowed; flowers very small, approximated almost into spike-like racemes; petals yellowish; fruit oblique-elliptical, somewhat biconvex, without any stalk-like base, generally one-seeded.

T. egena.

Branchlets broadly flattened.

Glabrous; branchlets much spreading; flowers very small, scattered; petals yellowish; fruit oblique-obovate, somewhat biconvex, without any stalk-like base; one- or two-seeded.

T. sulcata.

BOSSIAEA.

1012. Prostrate or diffuse 1013

Erect 1015

1013. Leaves opposite.

Somewhat trailing or straggling; branchlets very slender; leaves small, cordate, spurious-pinnately arranged; flowers on long almost capillary stalklets; fruit obliquely lanceolar-elliptical, with a conspicuous stalk-like base.

B. cordigera.

Leaves alternate 1014

1014. United upper lobes of the calyx hardly longer than the lower.

Prostrate or somewhat ascending, never much elongated nor spinescent; leaves from orbicular- to elliptic-ovate; flowers on rather long stalklets; bracteoles disconnected; fruit elongate-elliptical, almost without any stalk-like base.

B. prostrata.

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United upper lobes of the calyx much longer than the lower.

Slightly spinescent; branchlets rather elongated; leaves quite small, from almost cordate to ovate, oblique; flowers on long stalklets; bracteoles connate; fruit elongate-elliptical, almost without any stalk-like base.
B. buxifolia.

1015. Branchlets leafy 1016

Branchlets leafless 1019

1016. Leaves from orbicular to almost renate.

Tall; branchlets robust; leaves very small, rigid, alternating, but crowded, convex, at the margin recurved; flowers on short stalklets; fruit roundish, much compressed, almost without any stalk-like base, densely invested with short brown hairlets. **B. foliosa.**

Leaves from linear-lanceolar to cordate or from elliptic to obovate or obcordate 1017

1017. Leaves from obcordate to obovate.

Rather tall, much spinescent; leaves quite small, rigid; flowers on short stalklets; fruit small, glabrous, somewhat elliptical, with a stalk-like base.
B. microphylla.

Leaves from linear-lanceolar to ovate or almost cordate 1018

1018. Branchlets nearly cylindrical.

From rather dwarf to tall; leaves from cordate- to linear-lanceolar, much pointed, at the margin recurved; flowers on rather conspicuous stalklets; fruit lanceolar-elliptical, with a short stalk-like base. **B. cinerea.**

Branchlets much compressed.

Rather dwarf; leaves usually distant and few, always alternating. the lower generally ovate, the upper narrower, but often longer; flowers on short stalklets; fruit elongate-elliptical, with a long stalk-like base, at the margin thickened. **B. heterophylla.**

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1019. All the lobes of the calyx nearly equal.

Alpine; glabrous; branchlets very broadly flattened, with conspicuous and distant indentations; flowers almost sessile; calyx supported by crowded bracts; fruit with a stalk-like base. **B. bracteosa.**

The two upper lobes of the calyx much broader than the lower 1020

1020. Fruit rather narrow, thinly margined, with a long stalk-like base.

Glabrous; branchlets rather broadly flattened, with slight and distant indentations; stalklets exceeding the bracts; lower petals almost as long as the upper one; fruit almost broad-linear. **B. riparia.**

Fruit rather broad, thickly margined, with a short stalk-like base.

Glabrous; branchlets broadly flattened; lower petals considerably shorter than the upper one; stalklets exceeding the bracts; fruit linear-elliptical. **B. ensata.**

PLATYLOBIUM.

1021. Leaves scattered.

Rather dwarf; leaves from cordate to almost orbicular, pointed; stalklets concealed by bracts; fruit with scarcely any stalk-like base. **P. alternifolium.**

Leaves opposite 1022

1022. Stalklets concealed by bracts.

Rather dwarf; leaves from often deltoid to sometimes cordate-ovate, pointed; fruit less than twice as long as the calyx, with scarcely any stalk-like base. **P. obtusangulum.**

Stalklets much exceeding the bracts 1023

1023. Leaves deltoid.

Rather dwarf; fruit several times longer than the calyx, with a short stalk-like base. **P. triangulare.**

Leaves from cordate- to ovate-lanceolar.

Rather tall; fruit nearly three times as long as the calyx, with a long stalk-like base. **P. formosum.**

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GOODIA.

1024. Leaflets generally cuneate-ovate.

Usually tall; racemes often with many flowers; lower lobes of the calyx semilanceolar, as long as the tube; fruit about three times as long as broad, gradually narrowed at the base. **G. lotifolia.**

Leaflets generally obcordate-ovate.

Usually tall; racemes with few or several flowers; lower lobes of the calyx almost deltoid, shorter than the tube; fruit hardly twice as long as broad, suddenly narrowed at the base. **G. medicaginea.**

ZORNIA.

1025. Leaflets two.

Leaflets from almost ovate- to lanceolate-linear, glandular-dotted; stipules broadish, affixed above the base; flowers in spikes, much concealed by the large stipule-like bracteoles; petals yellowish; fruit few-jointed; seeds without any appendage. **Z. diphylla.**

DESMODIUM.

1026. Fruit-bearing stalklets hardly as long as the calyx, bent downward.

Comparatively robust; leaflets three together or the lowest solitary, from orbicular-ovate to nearly elliptical, mostly rather long, strongly venuled; flowers small, two to each bract, forming interrupted spike-like racemes; fruit beset with clinging hairlets, few-jointed. **D. brachypodum.**

Fruit-bearing stalklets much longer than the calyx, spreading.

Comparatively slender, often depressed; leaflets three together, from obcordate- to narrowly lanceolar-elliptical, mostly rather short, thinly venuled; flowers very small, on almost capillary soon elongated stalklets, forming short racemes; petals reddish; fruit beset with very short clinging hooked hairlets, few-jointed.

D. varians.

LESPEDEZA.

1027. Lower petals blunt, slightly incurved.

Very slender, much beset with appressed shining hairlets; leaf-stalks quite short; leaflets rather small, from elliptic- to linear-cuneate, nearly always three together; flowers small, from two to four in each axil, some of the lower without petals; bracteoles minute; petals pale or somewhat purplish or pink; fruit very small, ovate-orbicular.

L. cuneata.

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PSORALEA.

1028. Leaflets five to seven.

Depressed, glabrous or somewhat beset with minute hairlets; leaflets entire, from elliptic- to linear-lanceolar; racemes rather long, slender; flowers small, on very short stalklets; petals blue; fruit almost black.

P. tenax.

Leaflets three 1029

1029. Leaflets entire 1030

Leaflets denticulated 1031

1030. Racemes rather long.

Glabrous or slightly beset with short hairlets; leaf-stalks long; leaflets rather large, from elliptic- to elongate-lanceolar, acute; racemes spike-like, on long stalks; bracts lanceolar-ovate; calyx rather elongated; petals pink; fruit almost black, somewhat rough.

P. adscendens.

Racemes very short.

Dwarf, diffuse, sparingly beset with hairlets; leaflets small, from ovate- to narrow-lanceolar; racemes spike-like, sometimes nearly capitate; flowers almost without any stalklets; bracts orbicular-cordate; lobes of the calyx short; petals pink; fruit pale, somewhat beset with short hairlets. **P. parva.**

1031. Depressed, calyx elongated.

Almost grey or whitish from a lanuginous vestiture; leaflets from obovate to nearly orbicular; racemes spike-like; petals generally blue; fruits beset with soft hairlets.

P. eriantha.

Erect, calyx abbreviated.

Much beset with short hairlets; leaflets from lanceolar- to rhomboid-ovate, generally obtuse; racemes spike-like, often elongated; petals pink; fruit very small.

P. patens.

LOTUS.

1032. Petals yellow, but with a somewhat brown- or deep-reddish tinge.

Herb, never tall; stipules very minute; leaves sessile; leaflets from narrow-lanceolar to obovate and almost rhomboid; flowers few in each umbel; lobes of the calyx about as long as the tube, narrow, much pointed; fruit thin-cylindrical, straight. **L. corniculatus.**

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Petals wholly pink or dark-reddish or pale.

Herb, generally rather tall; leaflets from broad-linear to obovate; flowers several in each umbel; lobes of the calyx longer than the tube; fruit usually rather long, slender, straight. **L. Australis.**

TRIGONELLA.

1033. Flowers **in axillary sessile clusters.**

A small diffuse herb, almost or quite glabrous; leaflets from obovate- to orbicular-obcordate; petals yellowish; fruit compressed, several times longer than broad, slightly pointed, somewhat flexuous, superficially marked by reticulating venules. Figure 47. **T. suavissima.**

KENNEDYA.

1034. Leaves **reduced to a single leaflet.**

Twining, tall or sometimes prostrate, glabrous; leaflets from broadly ovate to elliptic-lanceolar, comparatively large, flat, of very firm texture; flowers very small, numerous in each raceme; petals blue or far less commonly white; fruit rather long, narrow, much compressed. **K. monophylla.**

Leaves **consisting of three leaflets** 1035

1035. Flowers **several on each stalk.**

Twining, tall, much beset with brownish hairlets; leaflets from orbicular-ovate to elliptic-lanceolar, comparatively large, of firm texture; flowers very large, in racemes; petals crimson, hardly ever white; fruit long, much compressed. **K. rubicunda.**

Flowers **generally only one or two on each stalk.**

Prostrate; leaflets from orbicular to ovate, comparatively small, of herbaceous texture, somewhat crisped; flowers rather large; petals crimson, rarely pale or white; fruit nearly cylindrical, slightly compressed.

K. prostrata.

GLYCINE.

1036. Lateral **leaflets close to the upper one** 1037

Lateral **leaflets somewhat distant from the upper one** 1038

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1037. Leaflets of the upper leaves narrow.

Stem and branches slender, much beset with often reflexed hairlets; leaflets rather small and flaccid, those of the lower leaves generally obovate, those of the upper from lanceolar to broad-linear; flowers in racemes, or at the lower portion of the plant clustered and then imperfect and still smaller; upper lobes of the calyx conspicuously separated; fruit narrow, compressed; seeds of the lowest fruits generally in shape different to those of the upper fruits. **G. clandestina.**

Leaflets of nearly all the leaves broad.

Stems and branches short and often simply prostrate, much beset with reflexed hairlets; leaflets small, from obcordate and orbicular to obovate and lanceolar-elliptical, those of the lower leaves the broadest; racemes spike-like, few-flowered, long-stalked; flowers small; upper lobes of the calyx much connate; petals often lilac-colored; fruits compressed, often of two forms; seeds of the shorter fruits more roundish. **G. Latrobeana.**

1038. Leaflets of the lower leaves broad.

Stems and branches somewhat elongated, much beset with reflexed hairlets; leaflets rather firm, from ovate to elliptical- and linear-lanceolar or those of the lower leaves from obovate to roundish and even obcordate, their venules generally reticular-prominent; racemes spike-like; flowers rather small; fruit broad-linear, considerably compressed; seeds black, shining. **G. tabacina.**

Leaflets of nearly all the leaves narrow.

Stems and branches somewhat elongated, the latter and particularly the leaves invested with grey shining appressed hairlets; leaflets mostly from lanceolar- to broadish-linear, nearly always acute; racemes spike-like; flowers rather large; fruit beset with silky shining hairlets; seeds black, smooth. **G. sericea.**

INDIGOFERA.

1039. Lobes of the calyx, unless the lowest, considerably shorter than the tube.

Somewhat shrubby; leaflets from orbicular-ovate to linear-elliptical; flowers in racemes; calyces small, often as well as the stalklets closely beset with short dark-colored hairlets; fruit linear-cylindrical, straight, rather elongated, glabrous. **I. Australis.**

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SWAINSONA.

1040. Petals yellowish or somewhat orange-colored ... 1041

Petals pink, deep-red or violet-colored 1042

1041. Fruit with a stalk-like base.

Tall, nearly glabrous; leaflets from roundish-ovate to elliptical; stipules rather broad, curved; racemes elongated; petals yellowish; lower petals simply curved; upper petal without supra-basal callosities; stigma accompanied by a tuft of hairlets; fruit inflated. **S. laxa.**

Fruit without any stalk-like base.

Depressed or ascending, densely beset with very short whitish hairlets; stipules particularly broad, often indented; leaflets cuneate- or elliptic-linear; racemes short; petals partly orange-colored, the upper without supra-basal callosities; lower petals simply curved, blunt; style rigid, much incurved; fruit almost narrow-ellipsoid. (S. phacifolia.) **S. stipularis.**

1042. Lower petals twisted 1043

Lower petals simply curved 1044

1043. Flowers comparatively small.

Prostrate or ascendant, much beset with soft hairlets; leaflets rather small, from obcordate- to lanceolar-ovate; stipules conspicuous; flowers in short racemes; petals violet-colored, the lower circularly curved, bluntish; upper devoid of prominent supra-basal callosities; fruit depressed-ellipsoid, rather small, without any stalk-like base. **S. oncinotropis.**

Flowers comparatively large.

Prostrate or ascendant, beset with soft hairlets; leaflets rather numerous, from elliptic- to lanceolate-linear; flowers fragrant; petals violet-colored, the lower circularly curved and additionally somewhat spiral; upper petal devoid of supra-basal callosities; fruit rather large, firm, without any stalk-like base. **S. procumbens.**

1044. Fruit with a long stalk-like base.

Very tall, deleterious, imperfectly invested with close short whitish hairlets; leaflets comparatively large, from

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narrow-elliptical to roundish-ovate; flowers large, in long racemes; petals pink, the upper with two prominent supra-basal callosities; fruit large, inflated.
S. Greyana.

Fruit without any stalk-like base 1045

1045. Petals bright-red.

Rather tall, scantily or hardly beset with hairlets; leaflets from lanceolar- to oval-elliptical; stipules deltoid-cordate; flowers few or several in each raceme, rather large; lower petals infracted-ascendant, pointed, sideways slightly twisted; fruit rather large, depressed, ovate, somewhat pointed. **S. plagiotropis.**

Petals violet-colored or pale 1046

1046. Fruit ovate-globular.

Leaflets very small, numerous, from obcordate- to cuneate-ovate; stipules minute; racemes elongated; flowers small; fruit short. **S. microphylla.**

Fruit ovate- or cylindric-ellipsoid 1047

1047. Upper petal without any supra-basal callosities.

Depressed, deleterious, somewhat beset with appressed hairlets; leaflets from linear- to ovate-elliptical; racemes generally rather elongated; hairlets of calyces and stalklets appressed, often blackish; petals almost violet-colored; fruit often turning blackish, nearly ellipsoid, pointed. **S. lessertifolia.**

Upper petal with two supra-basal callosities.

Rather dwarf, much beset with short often shining-grey hairlets; leaflets from broadish-linear to narrow-elliptical, blunt or notched; racemes very short, on elongated stalks; fruit nearly ellipsoid-cylindrical. **S. phacoides.**

GLYCYRRHIZA.

1048. Fruit very short, prickly-rough.

A perennial, usually diffuse herb, of strong scent; leaflets from elliptic- to linear-lanceolar; flowers in spike-like racemes; upper petal acute, pale-lilac or whitish, the other petals upwards somewhat violet; fruit irrespective of its asperities copiously glandular outside. Figure 48.
G. psoraloides.

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THYMELEAE.

PIMELEA.

1049. **Leaves mostly or all scattered** 1050

Leaves mostly or all opposite 1054

1050. **Involucral bracts two to four** 1051

Involucral bracts more than four 1053

1051. **Flowers in spikes.**

Annual, dwarf, but quite erect; leaves small, from elliptic- to broad-linear, concave, almost or quite glabrous; involucral bracts four or two, similar to the leaves, early deciduous; flowers very small, all staminate and pistillate; calyx yellowish, much beset with soft spreading hairlets; fruit dry. **P. trichostachya.**

Flowers in headlets or clusters 1052

1052. **Involucral bracts four.**

Annual, dwarf, but quite erect; leaves small, from elliptic- to broad-linear, soon glabrous, generally appressed; involucral bracts similar to the leaves, early deciduous; flowers in terminal headlets, minute, all staminate and pistillate; calyx invested with soft hairlets, yellow inside; fruit dry. **P. simplex.**

Involucral bracts two.

A somewhat shrubby plant, never tall, beset with appressed often scattered hairlets; leaves mostly linear-elliptical, and scattered; involucral bracts similar to the leaves; flowers very small, in singly terminal and also almost axillary clusters, all staminate and pistillate; calyx slender, invested with appressed shining hairlets, yellowish inside; fruit dry. **P. curviflora.**

053. **Flowers quite large.**

A somewhat shrubby plant, never tall, much beset with long soft and spreading hairlets; leaves from linear- to narrow-elliptical; involucral bracts eight or more, similar to the leaves; flowers in singly terminal headlets, all staminate and pistillate; calyx pale, invested with rather long soft hairlets; fruit dry. **P. octophylla.**

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Flowers rather small.

A somewhat herbaceous plant, never tall, much beset with soft spreading hairlets; leaves small, from oval- to narrow-elliptical, concave, mostly scattered; involucral bracts six to ten, similar to the leaves; flowers in singly terminal headlets, all staminate and pistillate; calyx invested with appressed hairlets; fruit dry.

P. phylicoides.

1054. **All flowers staminate and pistillate** 1055

Staminate and pistillate flowers on distinct plants ... 1064

1055. **Involucral bracts two.**

Finally tall, leaves from oval- to linear-elliptical, elongated, somewhat recurved at the margin, beset underneath with appressed shining hairlets; involucral bracts similar to the leaves; flowers in singly terminal and also many in almost axillary headlets; calyx whitish or pale-rosy, beset with appressed hairlets; fruit succulent, black.

P. drupacea.

Involucral bracts more than two 1056

1056. **Involucral bracts dissimilar to the leaves** 1057

Involucral bracts similar to the leaves 1063

1057. **Involucral bracts shorter than the headlets of flowers** 1058

Involucral bracts nearly as long as the headlets of flowers 1059

1058. **Involucral bracts four.**

A rather small shrub; leaves from ovate- to narrow-lanceolar, pointed, greyish-green, glabrous, somewhat incurved at the margin; involucral bracts lanceolar-ovate, the inner two much ciliolated; flowers in singly terminal headlets; calyx whitish, invested with appressed shining hairlets; fruit dry.

P. glauca.

Involucral bracts six to eight.

Finally tall; leaves rather large, spreading, flat, from oval to lanceolar, almost membranous and glabrous, paler beneath; involucral bracts nearly ovate, inside and outside beset with appressed hairlets; flowers comparatively large, numerous in each headlet, only some fertile-pistillate; calyx pale, beset with hairlets; fruit dry.

P. hypericina.

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1059. Involucral bracts beset with hairlets inside ... 1060

Involucral bracts glabrous on both sides 1061

1060. Leaves flaccid, rather elongated, flat, their lateral venules conspicuous.

Finally tall, leaves rather large, spreading, flat, generally from oval- to elliptical-lanceolar, almost membranous and glabrous; involucral bracts usually four, nearly as long as the flowers, from orbicular to ovate and pointed; flowers comparatively large, in singly terminal headlets numerous; calyx whitish, beset with appressed hairlets outside; fruit dry. **P. ligustrina.**

Leaves firm, rather abbreviated, incurved at the margin, their lateral venules inconspicuous.

A mostly slender shrub, never very tall; leaves glabrous, from broad- to narrow-lanceolar, pointed; involucral bracts four, concave, closely appressed, almost ovate, but much pointed, inside beset with shining appressed hairlets; flowers in singly terminal headlets; calyx rather large, whitish, invested with short silky-shining hairlets; fruit dry. **P. stricta.**

1061. Calyx scantily beset with hairlets.

A slender shrub, never very tall; leaves from spatular- to linear-elliptical, glabrous, somewhat incurved at the margin; involucral bracts four, mostly lanceolar-ovate; flowers in singly terminal headlets; calyx whitish; fruit dry. **P. spatulata.**

Calyx densely beset with hairlets 1062

1062. Leaves incurved at the margin.

A slender shrub, never tall; leaves firm, from lanceolar- to linear-elliptical, three-nerved, glabrous, their margin and also lateral venules somewhat prominent; involucral bracts four, rather rigid, from elliptical to ovate, conspicuously venulous; flowers in singly terminal headlets; calyx whitish, beset with appressed hairlets; fruit dry. **P. collina.**

Leaves recurved at the margin.

A slender shrub, finally somewhat tall; leaves from broad-linear to narrow-elliptical or occasionally somewhat lanceolar or spatular, glabrous; involucral bracts four, usually lanceolar-ovate, dissimilar to the leaves; flowers in singly terminal headlets; calyx whitish, beset with appressed hairlets; fruit dry. **P. linifolia.**

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1063. Flowers rather large, the calyx equally whitish.

Dwarf; somewhat herbaceous; branches beset with hairlets; leaves from oval to elliptical, nearly flat, almost glabrous; involucral bracts four, similar to the leaves, oval, about as long as the headlet of flowers, somewhat beset with hairlets inside; flowers numerous in each headlet; calyx invested with appressed shining hairlets; fruit dry.

P. humilis.

Flowers rather small, the calyx much red-tinged.

A dwarf highland-plant; leaves small, from lanceolar- to oval-elliptical, as well as the branches glabrous; involucral bracts four, about as long as the headlet of flowers, somewhat broader than the leaves; flowers several in each headlet; calyx somewhat beset with short hairlets.

P. alpina.

1064. Flowers in axillary clusters.

Finally tall, almost totally glabrous; leaves usually elongated and from broad-linear to narrow-lanceolar, somewhat recurved at the margin; involucral bracts two to four, very short; calyx small, nearly glabrous or slightly beset with short hairlets; fruit dry. Figure 74.

P. axiflora.

Flowers in terminal headlets 1065

1065. Fruit succulent 1066

Fruit dry 1067

1066. Calyx beset with short hairlets.

Finally tall; leaves glabrous, from lanceolar- to broad-linear, acute, flaccid, somewhat incurved at the margin; involucral bracts two to four, often shorter and somewhat broader than the leaves, surpassing the headlets; flowers very small, few or several in each headlet, yellow inside; fruit yellowish. **P. microcephala.**

Calyx quite glabrous.

Finally tall, quite glabrous; leaves generally linear-lanceolar; involucral bracts two, similar to the leaves, but often somewhat broader, surpassing the headlets, the latter occasionally rendered axillary; flowers very small, few in each headlet or sometimes only two together; calyx pale-yellow; fruit reddish or dark-purplish.

P. pauciflora.

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1067. Calyx quite glabrous.

A tall and ample shrub, chiefly maritime; leaves small, firm, crowded, from orbicular- to elliptic-oval, somewhat concave, glabrous, some occasionally scattered; involucral bracts four, similar to the leaves; flowers very small, few in each headlet; calyx always yellow; fruit almost dry.
P. serpyllifolia.

Calyx beset with short hairlets 1068

1068. Leaves recurved at the margin.

Dwarf; leaves small, from ovate- to elliptic-lanceolar, nearly glabrous; involucral bracts two to four, similar to the leaves; flowers minute; calyx beset with appressed shining hairlets; fruit dry. **P. elachantha.**

Leaves incurved at the margin.

Finally tall, amply branched; leaves small, from elliptic- to orbicular-ovate, glabrous, not rarely assuming a partial blueish hue; involucral bracts four, similar to the leaves, but somewhat larger; flowers very small; calyx either whitish or pale- or bright-yellow, beset with appressed shining hairlets; fruit dry. **P. flava.**

DRAPETES.

1069. Rudimentary petals two to each lobe of the calyx.

Much depressed, compact, somewhat beset with short hairlets; leaves minute, crowded, broadish- or elliptic-linear, appressed; flowers very small; calyx whitish; stamens alternating with the lobes of the calyx; fruit minute.
D. Tasmanica.

ROSACEAE.

ACAENA.

1070. Flowers in spikes.

Perennial, erect, never tall; leaflets in ten or less pairs, from elliptic- to orbicular-ovate, indented or almost pinnatifid, generally glabrous above, often beset with silky-shining hairlets beneath; flowers in solitary terminal spikes, only some fruit-bearing; lobes of the calyx generally five; fertile stamens five to ten; fruit-calyx beset with many short unequal terminally barbed pricklets.
A. ovina.

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Flowers in headlets.

Perennial; stems prostrate, often somewhat rooting; leaflets in four to ten pairs, from oval to orbicular, closely indented, often beset with hairlets underneath; flowers in solitary terminal globular headlets; calyx-lobes generally four; stamens two; fruit-calyx terminating into four, at the end barbed bristlets.

A. sanguisorbae.

ALCHEMILLA.

1071. Flowers in paniculate corymbs.

A perennial herb, here alpine, much beset with spreading soft hairlets; leaves plaited, from cordate- to renate-orbicular, short- and broad-lobed, also denticulated, the lowest on long stalks; stipules somewhat adnate to the leaf-stalk; calyx four-lobed, supported by four minute bracts (or bracteoles) close to the lobes; stamens four; fruitlet often only one. "Lady's Mantle."

A. vulgaris.

GEUM.

1072. Style jointed at its single twist near the middle.

A perennial erect herb, often beset with hairlets; basal leaves several, on long stalks; their leaflets three to five, obovate- or rhomboid-cuneate, irregularly serrulated, also occasionally somewhat lobed; upper leaves consisting of one or three leaflets, with smaller two accessory in a stipular position; flowers few or several, axillary-terminal; petals yellow; upper joint of the style deciduous; fruitlets dry. "Avens." **G. urbanum.**

POTENTILLA.

1073. Leaflets generally underneath invested with appressed silver-shining hairlets.

A perennial creeping herb, the off-shoots rooting; leaflets in several or many pairs, mostly from obovate to elliptical in outline, closely and deeply indented, occasionally almost devoid of vestiture; flowers on elongated stalks, solitary or rarely two together; bracts supporting the calyx high-adnate, somewhat indented; petals yellow; fruitlets dry. "British Silver-weed." **P. anserina.**

RUBUS.

1074. Leaves simple.

A tall and prickly climber, much invested with greyish or oftener brownish hairlets; leaves from ovate- to orbicular-cordate, indented, above wrinkled and gradually

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glabrescent; stipules and bracts fringe-like incised or shortly three- or five-lobed; panicles at last spreading; lobes of the calyx much pointed; petals whitish or reddish, hardly emersed; fruit red, almost globular, consisting of many rather succulent fruitlets.

R. Moluccanus.

Leaves **pinnate** 1075

1075. Leaflets **from almost orbicular- to cordate- or ovate-rhomboid.**

A somewhat climbing shrub, finally rather tall, much prickly; leaflets generally three to five, wrinkled above, densely invested underneath with whitish hairlets, irregularly denticulated or indented and often also slightly lobed, the terminal leaflet the largest; flowers few in each corymb or sometimes only two together or solitary; stipules and bracts narrow, often entire; lobes of the calyx usually much pointed; petals often reddish, shorter than the calyx; fruit bright-red, almost globular, consisting of several or few or rarely of many very succulent fruitlets. "Native Raspberry." Figure 52.

R. parvifolius.

Leaflets **from almost ovate to lanceolar, much narrowed upwards.**

A hardly climbing but prickly shrub, producing suckers, sprinkled with stalked glandules; leaflets generally five to seven, unequally serrulated, slightly or not lobed, scantily beset with hairlets, green underneath; corymbs few-flowered or sometimes paniculated or often reduced to two or one flower; stipules and bracts narrow, often entire; lobes of the calyx usually much pointed; petals often whitish, rather large; fruit dark-red, longer than broad, consisting of numerous very small and but slightly succulent fruitlets. **R. rosifolius.**

EUCRYPHIA.

1076. Leaves **pinnate.**

A tree, finally rather tall; leaflets in three to five pairs, accompanied by a terminal odd one, mostly from oval- to lanceolar-elliptical, firm, flat, entire, dark-green and nearly glabrous above, greyish beneath; flowers solitary, comparatively large; bracts resinously glued together into a small involucre; petals white, glabrous, from cuneate- to orbicular-ovate; seeds two to four maturing in each fruitlet, compressed, downward short-appendiculated. **C. Moorei.**

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SAXIFRAGEAE.

TILLAEA.

1077. Creeping or floating.

Stems sometimes rather elongated; leaves seldom crowded, usually from narrow- to linear-lanceolar; flowers rather minute, on solitary axillary often conspicuous stalklets; petals four, whitish, about as long as the sepals; discal scalelets opposite to the petals and fruitlets, alternating with the sepals and stamens; fruitlets much pointed; seeds usually two or three. **T. recurva.**

Erect or diffuse 1078

1078. Flowers mostly on long stalklets.

Quite dwarf, often of reddish hue; leaves very short; flowers very minute, on capillary stalklets; petals four, longer than the sepals; discal scalelets obliterated; fruitlets rather blunt; seeds few. Figure 54.
T. purpurata.

Flowers mostly on short stalklets 1079

1079. Flowers very minute.

Quite dwarf; leaves generally quite short; flowers often in dense leafy clusters; developed stalklets capillary; sepals very acute; petals four or five, pointed, shorter than the sepals; discal scalelets obliterated; fruitlets four or five, rather acute; seeds one or two maturing.
P. verticillaris.

Flowers comparatively large.

Quite dwarf; leaves short, rather acute; flowers often in leafy corymbs; sepals rather acute; petals generally four, as long as the sepals; discal scalelets obliterated; fruitlets hardly pointed; seeds few. **T. macrantha.**

BAUERA.

1080. Flowers stalked.

Leaflets small, serrulated; calyx deeply cleft into six to ten segments; stamens numerous; anthers yellow, almost roundish; fruit exserted, broad, many-seeded.
B. rubioides.

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Flowers sessile.

Leaflets small, almost entire; calyx cleft to about the middle into eight lobes; stamens nine to sixteen; anthers black, narrow-ellipsoid; fruit enclosed, narrow, one- or two-seeded. Figure 53. **B. sessiliflora.**

APHANOPETALUM.

1081. **Leaves large, from elliptic- to ovate-lanceolar, serrulated.**

Tall, glabrous; branchlets granular-rough; leaves firm, shining, prominently venuled; cymes generally few-flowered; sepals green, from oval- to lanceolar-elliptical; styles high-coherent; fruit comparatively small.
A. resinosum.

MYRTACEAE.

EUGENIA.

1082. **Anthers broader than long, their two cells almost globular.**

An umbrageous tree, finally tall; leaves very firm, short-stalked, from lanceolar- and rhomboid- to orbicular-ovate, somewhat pointed, shining, dark-green above, their secondary venules subtle, pennular-spreading; flowers small, in terminal panicles; calyx almost lobeless; petals minute; stamens extremely short; fruits ("Lilipillies") globular, rather succulent, whitish outside, with rosy tinge. Figure 60. **E. Smithii.**

ANGOPHORA.

1083. **Leaves conspicuously stalked, from ovate- to narrow-lanceolar.**

A rather tall tree, with spreading branches; stem-bark rough; foliage and inflorescence almost or quite glabrous or the latter somewhat setular-rough; leaves firm, much pointed, mostly opposite; flowers comparatively small, numerous in each panicle; calyx streaked by ten longitudinal alternately more prominent lines, its lobes whitish towards the margin; fruit rather small; fertile seeds few, much larger than the numerous sterile seeds.
A. intermedia.

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EUCALYPTUS.

1084. Anthers broader than long; fertile and sterile seeds in size much alike 1085

Anthers longer than broad or about as long as broad; fertile seeds much larger than the sterile seeds ... 1097

1085. Main-venules of leaves nearly longitudinal ... 1086

Main-venules of leaves, except the median, conspicuously divergent 1087

1086. Leaves much elongated.

Finally tall, except in the Alps; bark smooth, whitish outside; leaves very firm, almost lanceolar, unilaterally somewhat curved, equally green and shining on both sides; umbels nearly always solitary; flowers on very short stalklets; tube of the calyx semiovate-obconical, about twice as long as the hemispheric slightly pointed lid; anthers nearly renate; fruit semi- or truncate-ovate; border concave, descending; valves enclosed. One of the "White Gum-trees." **E. pauciflora.**

Leaves much abbreviated.

Never very tall; bark of the stem mostly rough and dark, of the branches outside greenish or somewhat bronzy-brownish; leaves firm, from oval- to narrow-lanceolar or rarely linear-lanceolar, almost straight, equally green and shining on both sides; umbels solitary, short-stalked; flowers very small, unprovided with stalklets; lid semi-ovate-conical, acute, shining, about as long as the tube of the calyx; anthers renate-cordate; fruit quite small, semiovate- or truncate-globular; valves enclosed. "Green-branched Gum-tree." **E. stellulata.**

1087. Leaves paler beneath.

Finally quite tall; stem-bark rough, dark outside, rather fibrous inside; leaves narrow- or elongate-lanceolar, unilaterally somewhat curved; their secondary venules numerous, subtle, much spreading; umbels on strongly compressed stalks, mostly solitary; stalklets usually shorter than the calyx; lid from hemispheric- or broad-conical attenuated into an acute apex; anthers renate; fruit generally semiovate; valves enclosed. "Blackbutt." **E. pilularis.**

Leaves almost equally green on both sides 1088

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1088. Outer stamens without anthers 1089

All stamens with anthers 1090

1089. Fruit semiovate.

Finally tall; bark often largely smooth; leaves firm, from narrow- to elongate-lanceolar, unilaterally somewhat curved, shining; secondary venules moderately spreading; umbels mostly solitary, their stalks somewhat compressed; tube of the calyx about twice as long as the hemispheric lid; anthers cordate-renate; fruit semiovate; border depressed or quite flat, reddish; valves very short, barely enclosed. One of the "White Gum-trees." **E. haemastoma.**

Fruit truncate-ovate.

Finally tall; persistent portion of bark deeply furrowed, hard, dark; leaves firm, from narrow- to elongate-lanceolar, shining, unilaterally somewhat curved; secondary venules slightly spreading, rather faint; umbels mostly solitary, their stalks compressed; lid hemispheric; anthers almost renate; fruit-border depressed or quite flat, reddish; valves very short, barely enclosed. "Spurious Ironbark-tree." **E. Sieberiana.**

1090. Flowers and fruits unprovided with stalklets.

Finally tall; bark persistent, fibrous; leaves firm, from narrow- to elongate-lanceolar, unilaterally somewhat curved, shining, often very inequilateral towards the base; secondary venules moderately spreading; umbels mostly solitary; calyx slightly angular; lid hemispheric; anthers renate-cordate; calycine portion of fruit semiovate; border broad, convex, emersed; valves wholly exserted. One of the "Stringybark-trees." **E. capitellata.**

Flowers and fruits provided with stalklets 1091

1091. Calyx-lid gradually pointed 1092

Calyx-lid rounded-blunt 1094

1092. Fruit valves wholly exserted.

Finally tall; bark fibrous, persistent on stem and main-branches; leaves firm, elongate- or broadish-lanceolar, somewhat unilaterally curved, shining, equally green on both sides; secondary venules moderately spreading; umbels mostly solitary; calyx-lid concavely attenuated, sharply pointed; anthers cordate-renate; calycine portion

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of fruit nearly hemispheric; border broad, convex, emersed; valves short. "Common Victorian Stringy-bark-tree." **E. macrorrhyncha.**

Fruit-valves wholly enclosed or slightly exserted ... 1093

1093. Fruit truncate-globular, its border depressed.

Finally very tall; bark very fibrous, persistent on stem and main-branches; leaves from elongate- to broad-lanceolar, shining and dark-green on both sides, inequilateral towards the base, much transparently dotted; lateral venules subtle, moderately spreading; umbels mostly solitary; lid generally semiovate; anthers cordate-renate; fruit comparatively small; valves very short; young seedlings rough from very short somewhat tufted hairlets. One of the "Stringybark-trees." **E. eugenioides.**

Fruit truncate-ovate, its border compressed.

Finally tall; bark fibrous, persistent on stem and main-branches; leaves from narrow- to rather elongate-lanceolar, somewhat unilaterally curved, less shining beneath, much transparently dotted; secondary venules subtle; umbels mostly solitary, on slender stalks; lid broad-conical, acute; anthers renate; fruit comparatively small; valves very short; young seedlings rough from very short somewhat tufted hairlets. "Peppermint-Stringybark-tree." **E. piperita.**

1094. Calyx granular-rough 1095

Calyx almost or quite smooth 1096

1095. Leaves broad, conspicuously curved, very inequilateral towards the base.

Finally very tall; bark fibrous, persistent on stem and main-branches; leaves quite firm, from elongate- to broad-lanceolar, shining and equally green on both sides; secondary venules prominent; umbels mostly solitary, on slender stalks; lid hemispheric; anthers renate; fruit truncate-ovate, its border compressed; valves totally enclosed. "Messmate-Stringybark-tree." **E. obliqua.**

Leaves narrow, slightly curved, almost equilateral.

Shrubby or dwarf-arborescent; leaves from broad-linear to narrow-lanceolar; umbels mostly solitary; lid nearly hemispherical; anthers renate; fruit truncate-ovate, its border compressed; valves enclosed. **E. stricta.**

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1096. Leaves comparatively narrow.

Finally rather tall; bark largely fibrous and persistent; leaves of rather thin texture, from linear- to narrow-lanceolar, unilaterally curved, shining on both sides, their secondary venules thin, slightly spreading; oildots copious, transparent; umbels mostly solitary; flowers very small; lid hemispherical; anthers minute, renate; fruit very small, generally truncate-ovate, its border depressed or nearly flat; valves enclosed. One of the "Peppermint-Gumtrees." **E. amygdalina.**

Leaves comparatively broad.

At last stupendously tall; bark outside whitish and smooth, except at the stem-base; leaves of rather thin texture, from elongate- to broad-lanceolar, much unilaterally curved, shining on both sides, their secondary venules slightly spreading; oildots extremely numerous and pellucid; umbels mostly solitary; flowers small; lid hemispherical; anthers minute, renate; fruit quite small, generally semiovate, its border depressed or nearly flat; valves enclosed; leaves of young seedlings opposite, sessile, cordate-roundish, whitish from waxy bloom. "Giant-Gumtree" and "Spurious Blackbutt." **E. regnans.**

1097. Anthers opening by pores 1098

Anthers opening by slits 1107

1098. Anthers truncated, opening terminally 1099

Anthers rounded-blunt, opening laterally 1102

1099. Leaves paler beneath.

Oftener a small than a large tree; bark persistent, hard and rough or by outer decortication whitish and smooth outside; leaves from narrow- to elongate-lanceolar, unilaterally somewhat curved; umbels mostly paniculated; lid thin, almost conical-semiovate; anthers minute, roundish-quadrangular; stigma much dilated; fruit truncate-ovate, its border compressed; valves enclosed. "Box-Ironbarktree." **E. paniculata.**

Leaves equally green on both sides 1100

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1100. Leaves almost orbicular; umbels paniculated.

Hardly ever tall; bark rough, persistent; leaves occasionally verging into an ovate form, from dull-green to almost ashy greyish; umbels mostly paniculated; flowers small; lid almost hemispheric; stigma slightly dilated; fruit truncate- or semi-ovate, its border compressed; valves enclosed. "Red Box-Eucalypt." **E. polyanthema.**

Leaves almost lanceolar; umbels mostly solitary ... 1101

1101. Umbels generally three-flowered; stalklets elongated.

Finally rather tall; bark either rugged, hard, dark and persistent, or decorticating and then smooth and whitish outside; leaves dull-green, from narrow- to elongate-lanceolar, unilaterally somewhat curved; umbels often pendent, with rather large flowers; calyx at first pale; lid usually semiovate and pointed; filaments oftener pale than reddish; stigma much dilated; fruit truncate- or semi-ovate, often comparatively large, its border compressed; valves four to seven, enclosed. "Victorian Ironbark-tree." **E. Leucoxylon.**

Umbels generally several-flowered; stalklets abbreviated.

A middle-sized tree, exceptionally very tall; bark quite persistent, rough; leaves dull-green, from narrow- to broadish-lanceolar, somewhat unilaterally curved; umbels partly solitary, partly paniculated; flowers rather small; lid generally conic-hemispherical; stigma much dilated; fruit truncate-ovate, its border compressed; valves four to six, enclosed. Figure 58. "Yellow Box-Eucalypt.' **E. melliodora.**

1102. Outer stamens without any anthers.

Shrubby or dwarf-arborescent; leaves from almost linear- to narrow-lanceolar, equally green, shining, their venules very subtle; umbels solitary; flowers small; calyx angular; lid pyramidal- or conic-hemispheric; anthers very minute, roundish; fruit hemi-ellipsoid or somewhat obconical, longitudinally three- to five-angular, its border compressed; valves enclosed. One of the "Mallees." **E. gracilis.**

All stamens provided with anthers or rarely few of the outer sterile 1103

1103. Umbels mostly or all solitary 1104

Umbels mostly or all paniculated 1105

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1104. Frutescent; leaves rather small, with closely approximated secondary venules.

Always shrubby; leaves firm, from linear- to narrow-lanceolar, almost straight, copiously dark-dotted, often hooked-pointed, their secondary venules subtle, much spreading; flowers quite small; lid usually semi-ovate; filaments sharply infracted before expansion, without flexuosity; anthers very minute, almost globular; fruit small, semi-ovate, its border depressed or flat; valves barely enclosed or slightly exserted. One of the "Mallees." **E. uncinata.**

Arborescent; leaves rather large, with distant secondary venules.

A tree, but never tall; bark persistent, rough, hard; leaves firm, from narrow- to broadish-lanceolar, somewhat unilaterally curved, their secondary venules rather slightly spreading; umbels occasionally short-paniculated; lid from broad-conical to pointed-hemispherical; anthers minute, almost roundish; stigma slightly dilated; fruit nearly semi-ovate or hemi-ellipsoid, its border compressed and annular-margined; valves rather deeply enclosed. South Australian "Peppermint-tree." **E. odorata.**

1105. Leaves of thin texture; calyx-lid double.

Rather tall; bark persistent, rough; leaves from narrow- to rather elongate-lanceolar, equally dull-green, slightly curved, their secondary venules subtle, moderately spreading; oildots numerous, often transparent; inner lid hemispheric, less wide than the calyx-tube; outer stamens sometimes partially without anthers, the latter globular, minute; fruit quite small, usually truncate-ovate, its border compressed; valves very short, quite enclosed. One of the "Box-Eucalypts." **E. largiflorens.**

Leaves of thick texture; calyx-lid single 1106

1106. Leaves dull-green or ashy-whitish; fruit hemi-ellipsoid.

Finally tall; bark rough, persistent, greyish outside; leaves from elongate- to ovate-lanceolar, unilaterally somewhat curved, their secondary venules prominent and moderately spreading; calyx somewhat angular, its lid nearly as long as the tube, semiovate-conical, acute; fruit-border compressed; valves deeply enclosed. One of the "Box-Eucalypts." **E. hemiphloia.**

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Leaves bright-green and shining; fruit truncate-ovate.

Shrubby or somewhat arborescent; bark smooth: leaves from broadish- to ovate-lanceolar, almost straight and equilateral, their secondary venules prominent and moderately spreading; flowers quite small; lid hemispheric, about half as long as the calyx-tube; anthers minute, nearly globular; fruit small, its border rather depressed; valves short, quite enclosed. **E. Behriana.**

1107. Valves of the fruit upwards exceedingly narrow.

Shrubby or somewhat arborescent; leaves from narrow- to almost elliptic-lanceolar, unilaterally slightly curved, equally light-green on both sides, their secondary venules subtle, much spreading; umbels on rather slender but somewhat compressed stalks; lid semiovate-conical, often narrowly attenuated; anthers broadish-ovate or almost globular; fruit truncate-ovate, neither large nor streaked, its border compressed; valves much pointed, conspicuously exserted. One of the "Mallees."

E. oleosa.

Valves of the fruit comparatively broad 1108

1108. Calyx-lid smooth, conical or hemispheric 1109

Calyx-lid verrucular-rough, crown-shaped 1120

1109. Leaves equally green on both sides 1110

Leaves evidently paler beneath 1118

1110. Valves of the fruit enclosed or slightly exserted ... 1111

Valves of the fruit prominently exserted 1114

1111. Stalklets elongated.

Finally tall; bark persistent, rough, somewhat fibrous; leaves from narrow- to elongate-lanceolar, unilaterally somewhat curved, their lateral venules numerous, very thin and regularly much spreading; umbels two- to four-flowered, on long slender stalks; flowers large; calyx at first pale, its lid broad-conical and pointed; fruit large, bellshaped-semiovate, angular, its border ascendingly concave. "Woolly Butt." **E. longifolia.**

Stalklets abbreviated 1112

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1112. Umbel-stalks nearly cylindrical.

Finally rather tall, except in the Alps; bark smooth, whitish outside; leaves very firm, from oval- to broadish-lanceolar, almost equilateral, dark-green and shining on both sides, their secondary venules rather distant, moderately spreading; umbels solitary, generally with several flowers; stalklets usually short; lid shining, hemispheric, short-pointed; anthers almost oval; fruit nearly semiovate, its border depressed, but narrow; valves very small, slightly exserted; leaves of young seedlings opposite, sessile, from oval to orbicular. "Cider-Eucalypt." **E. Gunnii.**

Umbel-stalks broadly compressed. 1113

1113. Leaves comparatively short.

Shrubby or somewhat arborescent; leaves very firm, from ovate- to elongate-lanceolar, equally light-green and shining on both sides, sometimes with a slightly yellowish tinge; the secondary venules rather distant, moderately spreading, much concealed; umbels solitary; flowers often large; calyx shining, usually streaked with longitudinal prominent lines; lid turgid towards the base, usually much narrowed towards the summit; anthers from ovate-roundish to elliptical; fruit generally large, truncate-ovate, often furrowed, its border compressed; valves acute, enclosed. One of the "Mallees." **E. incrassata.**

Leaves comparatively long.

Finally very tall; bark rough and solid on a portion of the stem, or by outer decortication largely smooth and whitish outside; leaves elongate- or narrow-lanceolar, considerably unilateral-curved; secondary venules thin, moderately spreading; umbels solitary; stalklets very short or obliterated; lid of calyx pyramidal or hemispheric-conical; tube lined by two to four prominent angles; anthers quadrate-oval; fruit semiovate- or cubic-hemiellipsoid, its border narrow, depressed; valves barely enclosed; leaves of young seedlings very broad, opposite, sessile. Victorian "Spotted Gum-tree." **E. goniocalyx.**

1114. Leaves opposite.

A small or hardly middle-sized tree; bark fibrous, extensively persistent; leaves mostly from cordate-orbicular to ovate, sessile, sometimes stalked and elongated, whitish or greyish from a waxy bloom; oil-glandules pellucid; umbels solitary, three- or few-flowered; stalklets almost none; lid from hemispheric to broad-conical; anthers nearly ovate; fruit small, semiovate-topshaped, its border narrow, depressed; valves small, somewhat exserted "Mealy Stringybark-tree." **E. pulverulenta.**

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Leaves scattered 1115

1115. Stalklets inconspicuous or none; calyx-lid hemispheric or semiovate and almost or quite pointless ... 1116

Stalklets conspicuous; calyx-lid elongate-conical or from an hemispheric base sharp-pointed 1117

1116. Umbels prevailingly several-flowered; bark rather fibrous, extensively persistent.

Finally rather tall; leaves of rather thin texture, narrow- or elongate-lanceolar, much unilaterally curved; secondary venules rather numerous, thin, very spreading; umbels solitary; stalklets very short; calyx-lid usually hemispherical and slightly pointed, shining; anthers nearly ovate; fruit small, semiovate-topshaped, its border narrow, rather convex; valves much protruding, deltoid; leaves of young seedlings broad, opposite, sessile. The "Apple-scented Gum-tree." **E. Stuartiana.**

Umbels prevailingly three-flowered; bark rather solid, extensively deciduous.

Finally tall and sometimes even gigantic; bark partially rough or quite smooth and then outside whitish; leaves of rather thin texture, generally from narrow- to elongate-lanceolar, much unilaterally curved; secondary venules numerous, thin, regularly much spreading; umbels solitary; stalklets very short; lid nearly semiovate, slightly pointed; calycine portion of the fruit semiovate, its border somewhat convex; valves finally quite exserted. deltoid; leaves of young seedlings narrow, opposite, sessile. "Manna-Gum-tree." **E. viminalis.**

1117. Calyx-lid elongate-conical; outer stamens straight before expansion.

Finally tall; bark extensively smooth and outside whitish; leaves generally from narrow- to elongate-lanceolar, often much unilaterally curved; secondary venules numerous, thin, very regularly spreading; umbels solitary, with several flowers; stalks rather elongated; stalklets conspicuous; tube of the calyx almost semiovate, narrowed gradually into the stalklet, much shorter than the lid; anthers nearly oval; calycine portion of fruit almost semiglobular; border convex, protruding; valves finally quite exserted, nearly deltoid. "Flooded Gum-tree." **E. tereticornis.**

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Calyx-lid from below hemispheric upwards sharp-pointed; outer stamens inflexed before expansion.

Finally tall; bark extensively smooth and outside whitish; leaves generally from narrow- to elongate-lanceolar, often much unilaterally curved; secondary venules numerous, thin, very regularly spreading; umbels solitary, with several flowers; stalks rather elongated; stalklets very conspicuous, quite slender; tube of the calyx nearly hemispherical, hardly half as long as the lid; anthers nearly oval; calycine portion of fruit semiglobular; border convex, protruding; valves finally quite exserted, nearly deltoid. "Red Gum-tree." **E. rostrata.**

1118. Umbels paniculated.

Finally tall; bark persistent, rough; leaves firm, somewhat flexible, from ovate- to elongate-lanceolar, almost equilateral, dark-green above; secondary venules almost pennular-approximated, subtle, nearly transversely spreading, the circumferential venule almost contiguous to the edge of the leaf; umbels large-flowered; stalklets elongated; lid short, tearing off on an irregular transverse line; filaments light-yellowish; anthers ovate-elliptical; fruit large, ellipsoid-urnshaped, its border compressed; valves deeply enclosed; fertile seeds large, expanding into a short or narrow appendicular membrane. "Bloodwood-tree." **E. corymbosa.**

Umbels solitary 1119

1119. Umbel-stalk broadly compressed; fruit hemiellipsoid.

Finally tall; bark persistent, dark, rough; leaves elongate or broadish-lanceolar, slightly unilateral-curved, dark-green above; secondary venules almost pennular-approximated, subtle, nearly transversely spreading; stalklets of flowers very short or obliterated; calyx-lid nearly hemispherical; anthers almost oval; fruit slightly angular, its border compressed; valves barely enclosed, quite short. One of the "Mahogany-Eucalypts." **E. botryoides.**

Umbel-stalk nearly cylindrical; fruit urnshaped-ellipsoid.

Finally rather tall; bark smooth, outside whitish; leaves from elongate- to broadish-lanceolar, shining, somewhat unilaterally curved; secondary venules rather distant, moderately spreading; umbels sometimes crowded; stalklets conspicuous; lid almost hemispheric, slightly overreaching the rim of the calyx, much shorter than the tube; anthers almost oval; fruit longitudinally streaked, its border compressed; valves deeply enclosed. "Sugary Gum-tree." **E. corynocalyx.**

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1120. Leaves of the adult plant very much longer than broad.

Finally very tall; bark smooth, whitish outside; leaves very firm, from narrow- to elongate-lanceolar, unilaterally much curved; secondary venules rather distant, moderately spreading; flowers large, solitary or sometimes two or three together; stalks and stalklets almost none; lid double, the outer fugacious, the inner crown-shaped; anthers ovate-ellipsoid; fruit large, nearly hemispheric- or obverse-pyramidal, angular, verrucular-rough, its border broad, depressed; valves three to six, emergent or convergent, deltoid; young seedlings bluish-white from a mealy somewhat ceraceous bloom, their stem quadrangular; their leaves opposite, sessile, from orbicular- to ovate-cordate. Figure 59. "Blue Gum-tree."

E. Globulus.

Leaves of the adult plant from hardly longer than broad to about twice as long.

Shrubby or scarcely arborescent; leaves very firm, from oblique-elliptical to orbicular, equally green and shining on both sides; secondary venules rather distant and faint; umbels capitular, solitary or the flowers singly axillary; stalks and stalklets none; calyx verrucular-rough; lid irregularly semiovate or semiglobular; anthers cordate; fruit rather large, hemispheric, its border broad, depressed, flat or convex; valves four to six, protruding, deltoid.

E. alpina.

BACKHOUSIA.

1121. Calyx-lobes nearly equal.

Tall-shrubby or finally arborescent; somewhat invested with short soft greyish hairlets; leaves opposite, on short stalks, from almost ovate- to broad-lanceolar, always acute, their secondary venules pennular-spreading; flowers in cymes; lobes of the calyx somewhat petaloid, from ovate- to elliptic-lanceolar, considerably longer than the almost orbicular petals; fruit completely enclosed.

B. myrtifolia.

TRISTANIA.

1122. Petals yellow.

Tall-shrubby or finally arborescent; somewhat invested with very short hairlets; leaves firm, scattered, from narrow- to ovate-lanceolar, pellucidly dotted; flowers fragrant, several in each cyme or only three or two together or occasionally quite solitary; lobes of the calyx from semiovate to deltoid, persistent, much shorter than the tube; sets of stamens about as long as the petals; fruit globular-ovate, exceptionally four-celled; valves exserted; seeds compressed, cuneate-elliptical, the embryonate seeds provided with a terminal oblique appendicular membrane.

T. laurina.

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MELALEUCA.

1123. Filaments crimson or purplish or lilac-colored ... 1124

Filaments whitish or yellowish 1128

1124. Leaves scattered.

From dwarf to rather tall, much beset with soft hairlets; leaves small, spreading, from ovate- to linear-lanceolar, gradually pointed, lined by three longitudinal venules; flowers in terminal or infra-terminal headlets; lobes of the calyx deciduous; connate part of stamens very short; filaments purplish or occasionally white; fruits globular-ovate, truncate. **M. squamea.**

Leaves opposite 1125

1125. Leaves narrow in proportion to their length.

Hardly tall, soon glabrous; leaves small, with broadish base, sessile, mostly lanceolar-linear; flowers few or two or even solitary in each axil or forming leafy headlets; lobes of the calyx short, persistent; connate parts of the stamens about twice as long as the petals; filaments red, fascicularly emanating; fruits nearly semi-ovate, emersed. Figure 57. **M. Wilsoni.**

Leaves broad in proportion to their length 1126

1126. Stamens elongated.

Tall-shrubby, glabrous; leaves rather large, from lanceolar- to ovate-elliptical, flat or at the margin recurved; carinular venule prominent; flowers large, in infra-terminal spikes; connate parts of the stamens much longer than the petals; filaments crimson, elongated, fascicularly emanating; fruits emersed. **M. hypericifolia.**

Stamens abbreviated 1127

1127. Leaves from oval to obovate.

Tall-shrubby, glabrous; leaves quite small, spreading, from elliptic to obovate, inflexed at the margin; flowers small, in headlets or short spikes, often infra-terminal; connate parts of stamens very short; filaments lilac-purplish; fruits much sunk into the branchlets. **M. gibbosa.**

Leaves from narrow-elliptical to broad-linear.

Tall-shrubby or arborescent, glabrous; leaves small, spreading, in four particularly close rows, at the margin inflexed; flowers small, in headlets or short spikes, often infra-terminal; connate parts of stamens very short; filaments lilac-purplish; fruits much sunk into the branchlets. **M. decussata.**

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1128. Leaves opposite 1129

Leaves scattered 1130

1129. Filaments white.

Tall-shrubby, glabrous; leaves small, from narrow- to broad-lanceolar, gradully recurved-pointed, somewhat inflexed at the margin; flowers in infra-terminal spikes or some scattered; lobes of the calyx blunt, persistent; connate portions of stamens slightly longer than the petals; filaments fascicularly emanating; fruits globular-ovate, truncate, emersed. **M. acuminata.**

Filaments pale-yellow.

From a large shrub to a small or seldom tall tree, often somewhat beset with soft hairlets; bark chartaceous-lamellar, whitish or pale; leaves small, spreading, from cordate- to lanceolar-ovate, short-pointed, almost flat, lined by five to seven longitudinal venules; flowers rather small, in terminal or soon infra-terminal spikes; connate parts of the stamens very short; fruits emersed. **M. squarrosa.**

1130. Filaments pale-yellow 1131

Filaments almost or quite white 1132

1131. Leaves elongated, recurved-pointed.

Finally from tall-shrubby to arborescent, almost glabrous; branches and branchlets hardly spreading; leaves acicular-cylindrical, narrowly channelled, shining; headlets of flowers small, nearly globular; fruits quite small, spherically crowded. **M. uncinata.**

Leaves abbreviated, blunt.

Finally from tall-shrubby to arborescent, chiefly maritime and on wet ground, almost glabrous; leaves broadishly linear-semicylindrical, slightly or hardly channelled, often greyish-green, occasionally of a rather bluish hue, frequently glandular-rough beneath; flowers in small occasionally somewhat leafy headlets or some scattered or short-spiked; fruits emersed, hardly longer than broad or shorter, their orifice ample, scarcely lobed.

... ... **M. pustulata.**

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1132. Spikes short or capitular.

Finally from tall-shrubby to arborescent, chiefly paludal, almost glabrous, often many-stemmed; leaves short, from narrow- to broad-linear, somewhat semi-cylindrical, rather straight or slightly curved, hardly pointed, often smooth; fruits emersed, scarcely longer than broad or shorter, their orifice ample, permanently lobed.

M. ericifolia.

Spikes elongate-cylindrical 1133

1133. Stamens twice or three times as long as the petals, with fascicular-emanating filaments.

Finally from tall-shrubby to arborescent, chiefly maritime and on dry ground, almost glabrous; leaves rather short, from linear- to narrow-lanceolar, almost flat or somewhat semi-cylindrical, recurved-spreading; calyx-lobes deciduous; fruits emersed, lobeless, evidently longer than broad, much contracted towards the orifice.

M. parviflora.

Stamens several or many times longer than the petals, with pinnular-emanating filaments.

Finally from tall-shrubby to arborescent, almost glabrous; leaves rather long, from narrow- to broad-linear, recurved-pointed, somewhat channelled; calyx-lobes persistent; fruits emersed, somewhat broader than long, their orifice ample, permanently lobed. **M. armillaris.**

CALLISTEMON.

1134. Filaments crimson 1135

Filaments yellowish or pale-purplish... 1138

1135. Filaments comparatively short.

From shrubby to occasionally arborescent; leaves channelled-linear, pungent; anthers yellow.

C. brachyandrus.

Filaments quite long 1136

1136. Anthers yellow.

Shrub, moderately high; leaves very rigid, usually narrow-lanceolar, almost flat, beneath often glandular-rough; flowers crowded in the spikes. **C. coccineus.**

Anthers reddish-black 1137

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1137. Leaves lanceolar, flat.

Finally tall-shrubby or occasionally arborescent; leaves hardly rigid; the secondary venules pennular-spreading; flowers somewhat crowded in generally elongated spikes. "Bottle-Brush." **C. lanceolatus.**

Leaves elongate-linear, channelled.

Shrub, finally tall; leaves rigid; flowers particularly large; fruit-calyx conspicuously contracted at the summit. **C. linearis.**

1138. Leaves from broadish to rather narrow, flat.

A shrub, finally tall except in the Alps, occasionally reaching arboreous height; leaves from broad-linear to narrow-lanceolar; filaments from much elongated to rather abbreviated, yellowish or less commonly pale-purplish; anthers yellow. **C. salignus.**

Leaves always quite narrow, channelled.

From tall-shrubby to arborescent; leaves acicular-linear, pungent; filaments rather short, yellowish; anthers yellow. **C. pityoides.**

LEPTOSPERMUM.

1139. Fruit usually with more than five cells.

Finally from tall-shrubby to arborescent, chiefly maritime and nearly glabrous; leaves firm, from obovate- to cuneate-elliptical, flat, without lustre; flowers generally rather large; calyx-lobes finally deciduous; fruit almost flat-topped or at the summit slightly convex, scarcely hardening; cells ten or less, rarely more, sometimes reduced to as few as five or even only four; fertile seeds compressed, broadish, surrounded by a membranous appendage. "Sand-stay." **L. laevigatum.**

Fruit usually with five cells 1140

1140. Leaves much pointed.

Finally tall-shrubby, nearly glabrous; leaves from almost acicular- to ovate-lanceolar, shining, marginally incurved; flowers sessile; calyx-lobes deciduous; fruit hard, quite convex at the summit; valves much protruding; seeds all very narrow. **L. scoparium.**

Leaves hardly pointed 1141

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1141. Nearly glabrous.

Finally from tall-shrubby to almost arborescent; leaves from obovate- to narrow-elliptical, occasionally quite narrow, often rather blunt and almost flat; flowers sessile; calyx-lobes deciduous; petals white or sometimes turning slightly yellowish; fruit hard, quite convex at the summit; valves conspicuously protruding; seeds all very narrow. **L. flavescens.**

Beset with short hairlets 1142

1142. Vestiture mostly formed of soft soon spreading hairlets.

Finally from tall-shrubby to arborescent; vestiture often extensive; leaves from obovate- to narrow-elliptical, sometimes quite narrow, often rather acute and marginally somewhat recurved; flowers sessile, not seldom large; fruit convex at the summit; valves conspicuously protruding; seeds all very narrow. **L. lanigerum.**

Vestiture mostly formed of appressed shining hairlets 1143

1143. Flowers sessile.

Rather dwarf-shrubby, spreading; leaves from spatular- to lanceolar- and obovate-elliptical, recurved-spreading and somewhat incurved at the margin; tube of the calyx much invested with silver-shining hairlets; lobes very short; petals white or slightly pink.
L. myrsinoides.

Flowers short-stalked.

A shrub, finally tall; leaves flat, from lanceolar- to linear-elliptical, sometimes elongated; flowers small, their stalklets and calyces somewhat invested with shining-grey hairlets; fruit only slightly hardening; valves almost enclosed. **L. attenuatum.**

KUNZEA.

1144. Petals and filaments white 1145

Petals and filaments yellow or lilac-purplish ... 1147

1145. Flowers on conspicuous stalklets.

From tall-shrubby to finally arborescent, generally glabrous; leaves linear- or elliptic-lanceolar; flowers small, solitary or two or three together or in corymbs; fruit from three- to five-celled, almost dry. **K. pedunculariis.**

Flowers sessile or on very short stalklets 1146

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1146. Fruit almost dry.

Finally tall, generally maritime, almost glabrous or somewhat beset with short greyish hairlets; leaves from linear- to narrow-lanceolar, concave, often fasciculated; flowers crowded along the leafy branchlets; fruit three-celled.
K. corifolia.

Fruit quite succulent.

Prostrate, mostly maritime; leaves from cordate- to ovate-orbicular; flowers in terminal headlets; fruit ("Muntries") comparatively large, three-celled, almost globular.
K. pomifera.

1147. Petals and filaments yellow.

From dwarf to rather tall, always alpine, beset with short hairlets; leaves very small, mostly semicylindrical-linear, somewhat channelled; flowers sessile, mostly crowded into headlets; fruit two- or three-celled, almost dry.
K. Muelleri.

Petals and filaments lilac-purplish 1148

1148. Fruit-calyx somewhat beset with short hairlets, its tube hardly longer than broad.

Shrubby, from quite dwarf to tall; leaves minute, mostly from linear- to narrow-elliptical, occasionally rather channelled; headlets of flowers small, terminal; fruit three-celled, almost dry, finally lateral.
K. parvifolia.

Fruit-calyx densely beset with long hairlets, its tube fully twice as long as broad.

Shrubby, from dwarf to tall; leaves rather small, mostly from obovate- to narrow-elliptical; headlets of flowers terminal; hairlets of the calyx soft and spreading; fruit three-celled, almost dry, finally lateral. **K. capitata.**

BAECKEA.

1149. Imperfectly shrubby, often prostrate.

Usually like all the other Victorian species glabrous; leaves rather small, flat, from linear- to elliptic-lanceolar; flowers rather large, solitary, each on a conspicuous stalk and stalklet; bracteoles remote from the calyx, long-persistent; petals white or somewhat pink; stamens ten or rarely five; fruit depressed-globular, three-celled; valves exserted. **B. diffusa.**

Perfectly shrubby, often erect 1150

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1150. Leaves hooked-pointed.

Shrub, finally tall; branchlets slender; leaves rather long, very narrow, linear-cylindrical, slightly channelled, hardly spreading; flowers small, generally solitary, their stalk about as long as the stalklet; petals white; stamens eight to fifteen; fruit three-celled. **B. Behrii.**

Leaves pointless or straight-pointed 1151

1151. Leaves elongated 1152

Leaves abbreviated 1154

1152. Leaves very narrow.

A rather tall shrub; branchlets slender; leaves narrowly semicylindric-linear, straight-pointed; flowers always solitary, small, on short stalklets; petals white; fruit two-celled. **B. linifolia.**

Leaves broadish 1153

1153. Leaves entire.

A shrub, finally tall or even somewhat arborescent, but flowering already in a dwarf state; leaves flat or slightly recurved at the margin, from linear- to elliptic-lanceolar; flowers in pedunculate umbels, from two to nine in each; petals white; stamens eight to fifteen; fruit three-celled. **B. virgata.**

Leaves crenulated.

Finally rather tall; leaves flat, spreading, from obovate and elliptical to almost orbicular; flowers on very conspicuous stalks and stalklets, three or two together, seldom solitary; petals white; stamens ten to fifteen; fruit three-celled. **B. crenatifolia.**

1154. Leaves almost flat.

A slender, glabrous shrub; leaves quite small, from oval- to lanceolar-elliptical; flowers on very short stalklets or sessile, solitary or two or three together; flowers small; petals white; stamens usually fifteen; fruit three-celled. **B. camphorata.**

Leaves trigonous or very turgid 1155

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1155. Leaves indistinctly angular.

A rather dwarf desert-shrub; leaves usually minute, from obovate- to narrow-ellipsoid, particularly turgid beneath; flowers quite small, on very short stalklets, always solitary; bracteoles broadish, fugacious; petals white; stamens ten, rarely more; fruit three-celled.
B. crassifolia.

Leaves distinctly angular 1156

1156. Stamens fifteen, five strictly opposite to the petals.

A small shrub; leaves very short, often minute, from semi-cylindric to ellipsoid, blunt; flowers sessile, always solitary, very small; bracteoles broadish; petals white or somewhat reddish; fruit three-celled. **B. ericaea.**

Stamens ten or less, none strictly opposite to the petals.

Alpine shrub, finally quite tall; leaves small, of pleasant odor, from linear- to lanceolar- or even obovate-trigonous; flowers very small, always solitary, on short stalklets; bracteoles narrow, fugacious; petals white; stamens sometime reduced to five or even four; fruit two-celled.
B. Gunniana.

DARWINIA.

1157. Lobes of calyx broadish, rounded-blunt.

A straggling shrub, rarely somewhat arborescent, glabrous; leaves small, mostly opposite, triangulate-linear, acute, somewhat compressed, slightly curved; flowers two to four together, mostly terminal, almost sessile; bracteoles acute, rather longer than the calyx; tube of the calyx five-furrowed, also transversely wrinkled; petals very small, whitish or reddish; style long-exserted, below the stigma beset with minute hairlets. **D. taxifolia.**

Lobes of calyx narrow, bristly-pointed.

A straggling shrub, quite glabrous; leaves small, opposite, narrowly triangulate-linear, rather acute or almost blunt, somewhat curved and compressed; flowers on short stalklets, axillary at the summit of branchlets; bracteoles blunt, rather shorter than the calyx, fugacious; tube of the calyx five-furrowed, also transversely wrinkled; petals very small, whitish or reddish, transparent, shorter than the calyx-lobes; style long-exserted, below the stigma beset with minute hairlets. **D. virgata.**

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THRYPTOMENE.

1158. Leaves from oval- to cuneate-elliptical, almost flat.

A glabrous shrub, finally rather tall; leaves small; flowers on short stalklets, axillary at and near the summit of branchlets, often solitary; bracteoles fugacious; tube of the calyx quite broad, compressed, almost smooth; lobes of the calyx longer than the petals; stamens five. Figure 56. **T. Mitchelliana.**

Leaves linear- or elliptic-trigonous 1159

1159. Calyx-tube ten-streaked in age.

A small glabrous shrub; leaves very small, linear-trigonous; flowers quite small, on very short stalklets, axillary at and near the summit of branchlets; calyx-tube semiovate-cylindrical; calyx-lobes longer than the petals; stamens five. **T. ericaea.**

Calyx-tube five-furrowed in age.

A small shrub; leaves very small, from linear- to elliptic-trigonous, generally ciliolated; flowers small, sessile, axillary at and near the summit of branchlets; tube of the calyx broadish; lobes shorter than the petals; stamens five. **T. ciliata.**

LHOTZKYA.

1160. Calyx-tube cylindrical.

Generally beset with short hairlets; leaves spreading, very short, semicylindric-linear, somewhat keeled; flowers small, crowded between leaves at and near the summit of the branchlets; bracteoles connate to near the middle; petals white, but often also with reddish tinge; fruit-calyx longitudinally five-lined. **L. genetylloides.**

CALYCOTHRIX.

1161. Calyx-lobes ending in a very short bristlet.

Rather glabrous; leaves very short, triangulate-linear; flowers small, capitularly or spicately crowded between leaves at and towards the summit of the branchlets; bracteoles connate towards the base; tube of the calyx comparatively short, attenuated into the summit and base; lobes hardly overlapping; petals white, often with reddish tinge. **C. Sullivani.**

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Calyx-lobes ending in a long bristlet.

Leaves generally almost triangulate- or quadrangulate-linear; flowers crowded between leaves at and towards the summit of the branchlets; bracteoles almost disconnected; tube of the calyx rather long, turgid up to the summit; lobes overlapping; petals whitish or somewhat reddish or sometimes slightly yellowish.

C. tetragona.

SALICARIEAE.

LYTHRUM.

1162. Tall, flowers large.

Perennial, here usually much beset with hairlets; leaves large, opposite or ternately or quaternately whorled, from a somewhat clasping base elongate-lanceolar; flowers cymosely whorled, forming leafy spikes; petals six, purplish-red when fresh; stamens generally twelve, alternately longer and shorter, but as well as the style variable in length. **L. Salicaria.**

Dwarf, flowers small.

Annual or of short duration, usually glabrous; leaves small, the upper scattered, from broad-linear to oval-elliptical; flowers small, axillary, mostly solitary; stamens six or less. **L. Hyssopifolia.**

AMMANNIA.

1163. Flowers in small cymes.

Humble, glabrous, annual; leaves small, opposite, from linear- to oval-elliptical, dilated and clasping at the base; flowers very small; petals four, minute; stamens usually four; fruit globular, extremely small. **A. multiflora.**

ONAGREAE.

EPILOBIUM.

1164. Stamens and style shorter than the petals; stigma club-shaped.

Erect or ascending herb, often beset with hairlets; leaves opposite or scattered, mostly from oval- to linear-elliptical and somewhat denticulated; flowers axillary and terminal, solitary; lobes of the calyx connate towards their base; petals bilobed, pink or pale; stamens almost straight; fruit filiform-cylindrical; tuft of hairlets several times longer than the seeds.

(E. tetragonum, partly.) **E. glabellum.**

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JUSSIEUA.

1165. Semi-aquatic or floating.

Glabrous or beset with soft hairlets and bearing cellular natatory organs; stipules glandule-shaped; leaves from obovate- to elliptical-lanceolar, narrowed into their stalk; flowers comparatively large, axillary, solitary, conspicuously stalked; petals five, quite yellow; stamens ten; fruit cylindrical. (J. repens, partly.) **J. diffusa.**

RHAMNACEAE.

COLLETIA.

1166. Branchlets articularly inserted on the branches.

Usually a low shrub, glabrous or beset with very short hairlets; branches smooth, for a long while greenish; branchlets rather robust, cylindrical, pungent; leaves scantily developed, but then crowded into clusters, small, from broad-linear and cuneate to elliptical; flowers axillary, few together or solitary, on short stalklets; calyx white; petals present, but minute; fruit bluntly somewhat trilobed. **C. pubescens.**

CRYPTANDRA.

1167. Calyx comparatively small or quite minute ... 1168

Calyx comparatively large 1174

1168. Flowers densely crowded 1169

Flowers hardly crowded 1172

1169. Leaves from linear to elliptical 1170

Leaves from ovate or orbicular to cuneate-obcordate 1171

1170. Clusters of flowers stalked.

Vestiture to some extent velvet-like; leaves firm, mostly from linear to elliptical, revolute at the margin, somewhat pointed, above glabrous or somewhat beset with hairlets; floral leaves often velvety-whitish above from short hairlets; flower-clusters stalked, small; fruitlets indehiscent, their endocarp membranous.

C. vexillifera.

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Clusters of flowers sessile.

Vestiture extensively velvet-like; leaves from linear to elliptical, revolute at the margin; upper stipules relatively large; flower-clusters head-like crowded, usually supported by a single floral leaf; endocarp of fruitlets membranous. **C. subochreata.**

1171. Leaves from ovate to orbicular, lobeless.

Finally tall, much beset with soft hairlets; leaves often large, always much wrinkled, somewhat wavy at the margin; floral leaves roundish, velvety-whitish also above; flower-clusters forming leafy cymes; fruitlets indehiscent. **C. Hookeri.**

Leaves cuneate-obcordate, short-trilobed at the upper end.

Prostrate; leaves always small, hardly wrinkled, their lobes sometimes indented or the middle lobe wanting; flower-clusters arranged in leafy cymes; floral leaves velvety-whitish above; endocarp of fruitlets membranous. **C. obcordata.**

1172. Flowers in cymes.

Finally tall, ; vestiture thin, velvet-like; leaves linear, spreading, revolute at the margin, glabrous above; flowers few in each cyme; bracts persistent, lanceolar, pointed. **C. D'Altoni.**

Flowers in clusters or leafy spikes 1173

1173. Lobes of the calyx shorter than the tube.

Nearly glabrous; branchlets often spinescent; leaves small, usually from narrow-elliptical to roundish-ovate, somewhat recurved at the margin or almost flat; flowers arranged in short leafy spikes; calyx much longer than the roundish bracts, with a thinly velvet-like vestiture outside; fruitlets longitudinally dehiscent. **C. amara.**

Lobes of the calyx as long as the tube.

Much beset with very short hairlets; branchlets hardly spinescent; leaves very small, recurved at the margin, usually blunt; flowers quite small, crowded into clusters; bracts nearly as long as the calyx; fruitlets longitudinally dehiscent. **C. tomentosa.**

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1174. Leaves narrow, at the margin revolute.

Branchlets somewhat spinescent; leaves very small, much clustered; flowers crowded at the end of branchlets; calyx with silk-like vestiture outside, its lobes as long as the tube; bracts almost rhomboid. **C. propinqua.**

Leaves broadish, at the margin somewhat recurved or flat 1175

1175. Leaves lanceolar.

Leaves rather large, above smooth and very shining, beneath densely beset with short grey hairlets, the lateral venules concealed; flowers crowded into dense sessile headlets, only moderately large; bracts almost oval; calyx enveloped in white intricate hairlets, the lobes much shorter than the tube; fruitlets longitudinally dehiscent. **C. Scortechinii.**

Leaves from obcordate to spatular-ovate.

Leaves densely invested underneath with shining hairlets; floral leaves velvety-whitish above; flowers numerously crowded at the summit of the branchlets; bracts from orbicular to lanceolar, pointed; calyx with a somewhat silk-like vestiture outside, the tube elongated, the lobes much shorter than the tube; fruitlets longitudinally dehiscent. **C. leucophracta.**

POMADERRIS.

1176. Flowers with petals 1177

Flowers without petals 1180

1177. Panicles large... 1178

Panicles small 1179

1178. Vestiture thick, usually present also on the upper side of the leaves.

Finally tall; leaves large, from elliptic or lanceolar to ovate, flat, entire, generally brownish underneath; calyx yellowish inside; style three-cleft; fruitlets enclosed to the middle, opening by a rather large roundish aperture. **P. lanigera.**

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Vestiture thin, usually absent from the upper side of the leaves.

Finally arborescent; leaves large, from elliptical-lanceolar to ovate, almost or quite flat, entire, generally whitish or greyish underneath; calyx quite small, yellowish inside; anthers in succession touching the stigmas; style three-cleft; fruitlets enclosed to the middle, opening by a rather large lid. **P. elliptica.**

1179. **Leaves from ovate to nearly orbicular.**

Finally rather tall or even somewhat arborescent; leaves small, entire, flat, underneath thinly invested with whitish or greyish hairlets; fruitlets enclosed only towards the base, opening marginally. **P. vaccinifolia.**

Leaves from narrow-elliptical to nearly oval.

Rather low in stature; leaves small, entire, almost flat, underneath invested with whitish shining hairlets; flowers only few in each cyme; fruitlets only enclosed towards the base, opening marginally. **P. ledifolia.**

1180. **Leaves entire or at the summit two-lobed** 1181

Leaves all around but irregularly denticulated ... 1186

1181. **Leaves two-lobed at the summit.**

Dwarf; leaves small, almost wedge-shaped, the lobes entire or denticulated; umbels crowded; anthers almost cordate; fruitlets enclosed to the middle, opening by a longitudinal slit. Figure 61. **P. obcordata.**

Leaves quite entire 1182

1182. **Fruitlets opening by a slit or roundish aperture** ... 1183

Fruitlets opening marginally 1185

1183. **Flowers capitular-crowded.**

Finally rather tall; vestiture thick, brownish; leaves rather small, from ovate or somewhat rhomboid to orbicular; headlets of flowers short-stalked, surrounded by broadish bracts; calyx pale-yellowish; fruitlets opening by a slit. **P. betulina.**

Flowers paniculated 1184

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1184. Vestiture without any lustre.

Finally rather tall or even somewhat arborescent; vestiture thin, greyish or whitish; leaves from elliptic to ovate, flat, almost smooth above; panicles comparatively ample; fruitlets opening by a large lid. **P. cinerea.**

Vestiture very shining.

Finally rather tall; vestiture grey-brownish, dense; leaves ovate-lanceolar, flat, smooth above; panicles comparatively long; fruitlets opening by a large lid, enclosed to the middle. **P. ligustrina.**

1185. Leaves from obcordate- to obovate-orbicular.

Rather tall; vestiture thin, greyish or whitish; leaves very small, flat; flowers few or only two together or even solitary; fruitlets much exserted. **P. elachophylla.**

Leaves from linear- to narrow-elliptical.

Never tall; vestiture greyish, partly spreading; leaves quite small, revolute at the margin; flowers few together, very small; fruitlets much exserted.

P. phylicifolia.

1186. Leaves and panicles relatively large.

Finally very tall and often arboreous; vestiture greyish or brownish; leaves from lanceolar to almost ovate but nearly always acute, usually flat; calyx-lobes for a long while persistent; fruitlets enclosed to the middle, opening tardily by a rather small aperture.

P. apetala.

Leaves and panicles relatively small 1187

1187. Leaves much wrinkled above.

Finally tall and even somewhat arborescent; vestiture short, greyish; leaves from almost elliptical to ovate; flowers quite small; fruitlets much exserted, opening tardily by a large lid. **P. subrepanda.**

Leaves slightly wrinkled above 1188

1188. Panicles formed of almost capitular umbels.

Rather tall; vestiture short, close; leaves from lanceolar to elliptical-ovate; fruitlets high-enclosed, opening by a rather large lid. **P. prunifolia.**

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Panicles raceme-like.

Never very tall, often maritime; vestiture often brownish, dense; leaves from ovate to orbicular; calyx rather large, with persistent lobes; fruitlets at least half-enclosed, opening by a large membranous deciduous lid.

P. racemosa.

VINIFERAE.

VITIS.

1189. Leaves simple.

Evergreen, finally tall; young branchlets and inflorescence much beset with soft brown hairlets; leaves from almost ovate to nearly cordate, pointed, conspicuously denticulated except towards the base; cymes of umbels or fascicles opposite to leaves; petals four, disconnected; berries globular, black outside. **V. Baudiniana.**

Leaves compound.

Evergreen, finally almost arborescent; young branchlets beset with brown hairlets; leaflets usually five, on separate stalklets, firm, glabrous, from almost lanceolar to nearly ovate, always pointed, hardly denticulated, greyish-pale beneath, their ultimate venules closely reticulated; tendrils simple or double; cymes of umbels or fascicles ample, opposite to leaves; petals four, yellowish, disconnected; berries rather large, globular, bluish-black outside. "Native Grape."

V. hypoglauca.

HALORAGEAE.

LOUDONIA.

1190. Petals normally two.

Slender, glabrous, the whole plant assuming often a yellowish or somewhat bluish tinge; leaves rather small, mostly distant; flowers in panicles; calyx expanded into two longitudinal membranes; petals yellow; stamens usually four; styles generally two; fruit biangular or rarely triangular, the membranous edges conspicuous.

L. Behrii.

MYRIOPHYLLUM.

1191. All leaves entire 1192

Submerged leaves capillary-pinnatisected 1194

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1192. Leaves scattered.

Dwarf; leaves very small, linear-cylindrical; flowers minute; stamens two to four; hairlets of stigmas very minute; fruit-calyx lobeless; fruitlets four, generally smooth.

M. integrifolium.

Leaves opposite 1193

1193. Leaves from broad- to narrow-linear.

Dwarf; leaves small; staminate flowers generally stalked; stamens eight; hairlets of stigmas rather long; fruit-calyx short-fourlobed; fruitlets four, rough.

M. pedunculatum.

Leaves from oval to narrow-elliptical.

Mostly creeping and semi-aquatic; leaves very small, rarely trilobed; staminate flowers generally sessile; stamens eight; fruit-calyx short-fourlobed; fruitlets four, smooth.

M. amphibium.

1194. Emerging leaves entire 1195

All leaves capillary-pinnatisected 1196

1195. Emerging leaves filiform-linear.

Stems and branches usually elongated; leaves whorled, lower submerged leaves divided into long capillary segments, the upper gradually short-lobed or merely denticulated; stamens eight; fruitlets four, often rough.

M. variifolium.

Emerging leaves from oval to narrow-elliptical.

Stems and branches usually elongated; leaves whorled, the submerged leaves nearly all divided into long capillary segments; stamens eight; fruitlets four, often smooth.

M. elatinoides.

1196. Leaves whorled.

Stems and branches rather short; leaves comparatively small, often greyish-green; emerged leaves oval in outline, pinnatifid; stamens eight; fruitlets four, very small, rough.

M. verrucosum.

Leaves nearly all simply opposite.

Stems and branches elongated, dotted; some of the leaves not seldom ternately whorled; staminate flowers stalked, supported by a conspicuous petaloid marginally converging bract; stamens eight; fruitlets four, smooth.

M. Muelleri.

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HALORAGIS.

1197. Calyx-lobes, petals and pistils constantly two.

Semi-aquatic, glabrous herb; leaves scattered, pinnatisected, their lobes or segments very narrow, some occasionally again divided; flowers axillary, solitary or two or few together, very small; stamens four; fruit in its entirety almost compressed-ovate, somewhat pointed, consisting of two connate fruitlets.

(Meionectes Brownii.) **H. Meionectes.**

Calyx-lobes, petals and pistils four or seldom three or two 1198

1198. Fruit of spongy texture.

A sub-alpine somewhat woody plant, comparatively tall; leaves all opposite, rather large, flat, mostly lanceolar, serrulated; two of the calyx-lobes deltoid, the two other truncate-rhomboid; fruit comparatively large, expanding into four lateral membranes. **H. Baeuerleni.**

Fruit solid 1199

1199. Petals almost white, relatively long.

Glabrous plant, comparatively tall; leaves mostly opposite, generally linear-lanceolar, hardly denticulated; floral leaves also opposite; flowers solitary or two together at each floral leaf; petals gradually pointed; stigmas four, smooth; fruit rather large, somewhat quadrangular, usually one-seeded. **H. monosperma.**

Petals colored, relatively short 1200

1200. Fruit at the base and at the summit enlarged by four tooth-like spreading excrescences.

Somewhat invested with short soft hairlets; leaves mostly scattered, generally lanceolar, conspicuously denticulated; flowers clustered within each bract; stigmas slightly bearded; fruit large, quadrangular, the angles protruding at top and bottom. Figure 55. **H. odontocarpa.**

Fruit without any regular conspicuous tooth-like excrescences at either base or summit 1201

1201. Leaves partly or mostly long- and narrow-lobed.

Weak slender herb, seldom tall, almost smooth; stem generally unbranched; leaves scattered, the lower producing three to five narrow lobes, the upper linear and

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often entire; racemes spike-like; calyx-lobes longer than broad; stigmas conspicuously beset with short hairlets; fruit rather small, roundish-quadrangular, almost smooth or slightly rough, broadest at the base.

H. heterophylla.

Leaves lobeless 1202

1202. Leaves semicylindric-linear, carnulent, entire.

Glabrous; leaves scattered, pointed; flowers forming leafy racemes, usually clustered within each floral leaf; stigmas almost glabrous, as well as the fruit-cells from two to four; fruit ovate-globular or somewhat quadrangular, slightly wrinkled or smooth. **H. digyna.**

Leaves flat or recurved at the margin, generally denticulated 1203

1203. Leaves narrow, recurved along the margin.

Beset with spreading soft hairlets; leaves mostly scattered, usually rather long, broad- or lanceolate-linear, entire or somewhat denticulated; stigmas beset with minute hairlets; fruit tubercular-rough, longer than broad.

H. elata.

Leaves broadish, flat 1204

1204. Almost or quite erect 1205

Prostrate and somewhat ascending 1207

1205. Fruit rather large.

Almost smooth or somewhat rough, rather rigid, slightly beset with hairlets; leaves from broad- to narrow-lanceolar, often of greyish hue, hardly paler beneath, the lower opposite, the upper scattered, distinctly or imperfectly serrated or denticulated or nearly entire; flowers one or more in the axil of each floral leaf or bract; lobes of the calyx considerably longer than broad; stigmas beset with minute hairlets; fruit rather large, nearly globular or somewhat quadrangular, often tubercular-rough. **H. aspera.**

Fruit very small 1206

1206. Leaves from ovate- to narrow-lanceolar.

Beset with rather rigid hairlets; leaves mostly opposite, rather short, serrulated; bracts scattered; flowers solitary within each bract; fruit pale, globular-quadrangular, wrinkled and rough, not seldom one-seeded.

H. tetragyna.

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Leaves from ovate- to orbicular-cordate.

Beset with rather rigid hairlets; leaves mostly opposite, rather short, serrulated; bracts scattered; flowers solitary within each bract; fruit pale, globular-quadrangular, wrinkled and rough. **H. teucrioides.**

1207. Bracts mostly leaf-like.

Alpine; slightly rough; leaves mostly opposite, rather short, almost sessile, from lanceolar- to cordate-ovate, serrulated; bracts opposite or scattered; flowers solitary, sessile within each bract; stigmas beset with minute hairlets; fruit very small, pale, globular-ovate, faintly eight-streaked, otherwise smooth. **H. depressa.**

Bracts minute.

Glabrous; leaves mostly opposite, orbicular-cordate, closely serrulated; flowers solitary within each bract, very small; stigmas beset with very minute soon evanescent hairlets; fruit quite minute, pale, globular, streaked by eight longitudinal prominent lines, otherwise smooth. **H. micrantha.**

CALLITRICHE.

1208. Mostly submerged.

Upper or rarely all leaves from spatular to obovate, lower leaves linear; stamen through absence of calyx basal (hypogynous); bracteoles curved; styles when short remaining erect, when long much reflexed; fruitlets very small, broadly or narrowly margined, connate towards their inner angle. **C. verna.**

Mostly creeping.

Leaves all nearly rhomboid; stamen through absence of calyx basal; styles short, erect; fruitlets four, very small, towards their inner angle connate into an obcordate-orbicular fruit, membranously margined. **C. Muelleri.**

CERATOPHYLLUM.

1209. Segments of leaves sharply denticulated.

Stems and branches elongated; flowers axillary, solitary, sessile, the staminate and pistillate flowers distinct, but on the same plant; stamens through absence of calyx basal, without any conspicuous filaments; fruit often armed with two almost basal prickles or short excrescences; cotyledons deeply bilobed. **C. demersum.**

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ARALIACEAE.

ASTROTRICHA.

1210. Leaves from broad-linear to almost narrow-elliptical.

Vestiture short and dense, often greyish or somewhat brownish; leaves generally blunt, at the margin revolute, above glabrescent, but rough; umbels paniculated; vestiture extending also to the outer side of the petals; fruit small. **A. ledifolia.**

PANAX.

1211. Leaflets obliquely elliptic-lanceolar, equally green and shining on both sides.

Finally tall, almost of palm-like stature; stem straight, only near the summit branched and never extensively so; leaves always simply pinnate; leaflets of rather thin texture; umbels racemous-paniculate; fruit bluish. **P. Murrayi.**

Leaflets from ovate-lanceolar to almost linear, often dull-grey underneath.

Shrub, finally arborescent, constantly glabrous; leaves simply or compound-pinnate; leaflets entire or denticulated or variously lobed, of rather firm texture; venules much concealed; umbels irregularly paniculate; fruit bluish-white. Figure 52. **P. sambucifolius.**

UMBELLIFERAE.

ACTINOTUS.

1212. Bracts large, very much longer than the umbel.

Closely invested with crisped hairlets; leaves rather large, cleft into several narrow lobes or segments, at last almost glabrous above; umbels on long stalks; bracts petal-like, radiating around the umbels, velvety-white; flowers densely crowded, the outer staminate only; petals absent. **A. Helianthi.**

Bracts small, scarcely longer than the umbel.

Slender, slightly beset with hairlets; leaves rather small, usually cleft into three somewhat lobed segments; umbels on very short stalks; flowers nearly all staminate and pistillate; petals absent; fruit often densely ciliolated. **A. Gibbonsii.**

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CRANTZIA.

1213. Articulation of leaves conspicuous.

Stem hardly rising from the ground; leaves somewhat hollow; stalks of the umbels generally much shorter than the leaves; flowers very small; fruit rather turgid.

C. lineata.

ACIPHYLLA.

1214. Leaves elongate-linear, blunt, undivided.

Slender alpine plant; leaves mostly basal, somewhat channelled, finely streaked; fruitlets rather large, dorsally convex; umbellules few to each umbel. Figure 63.

A. simplicifolia.

Leaves dissected into broad-linear pungent segments.

Robust alpine plant; leaves large, mostly basal, bi- or tri-pinnate, their segments only slightly spreading, somewhat channelled, finely streaked, very shining; fruitlets dorsally convex; umbellules many to each umbel.

A. glacialis.

HUANACA.

1215. Glabrous or slightly beset with hairlets.

Humble alpine plant; leaves on comparatively long stalks, from ovate-orbicular to cordate, entire; umbel solitary; length of fruitlets but little exceeding their breadth; oil-ducts (vittae) none. **H. hydrocotylea.**

AZORELLA.

1216. Creeping.

Glabrous alpine herb; leaves from orbicular- to renate-cordate, bluntly lobed and crenate; umbels sessile or short-stalked, capitular; calyx-lobes about half as long as the petals, acute; petals minute, greenish; fruitlets dorsally somewhat compressed. **A. Muelleri.**

Tufted 1217

1217. Calyx lobes much smaller than the petals, almost obliterated.

Glabrous alpine herb; leaves radical, shining, wedge-shaped, short-lobed or indented at the summit, downward narrowed into long stalks; umbels few-flowered or still more reduced, somewhat paniculate; petals conspicuous, white; fruitlets dorsally quite convex.

A. cuneifolia.

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Calyx-lobes white, as large as the petals.

Alpine herb, much beset with spreading hairlets; leaves basal, from rhomboidal- to cordate-orbicular, short-lobed and somewhat crenate; flowers irregularly umbellate and somewhat paniculate; calyx-lobes almost alike to the petals and along with them deciduous; fruitlets narrowly coherent, dorsally hardly convex; terminal disk broadish.
A. dichopetala.

OREOMYRRHIS.

1218. **Erect.**

Hardly or slightly branched; leaves comparatively large, much beset with hairlets, their segments numerous and repeatedly divided; umbel-stalks often much elongated; stalklets not rarely beset with an appressed vestiture; petals minute, white, tinged with red; fruit rather turgid, contracted upwards. **O. andicola.**

Prostrate.

Cushion-shaped; leaves comparatively small, glabrous, with simple or bi- or tri-fid segments; umbels few-flowered, on very short stalks; anthers dark-red; fruits always much shorter than the stalklets.
O. pulvinifica.

HYDROCOTYLE.

1219. **Leaves centrifixed.**

Perennial, creeping, semiaquatic or floating, of deleterious properties; leaves fixed at the centre to their stalk, orbicular, lobeless, somewhat crenulated; umbels capitular and solitary or additionally one to three whorls of flowers below; petals minute, pink; fruitlets quite compressed. **H. vulgaris.**

Leaves quite or nearly basifixed 1220

1220. **Perennial** 1221

Annual 1226

1221. **Leaves almost or quite entire.**

Stem creeping and rooting; leaves from cordate- to renate-orbicular, entire or waved-sinuous, occasionally somewhat denticulated; umbels capitular, few-flowered or reduced sometimes even to two flowers; fruitlets rather large, considerably compressed. **H. Asiatica.**

Leaves crenate or lobed 1222

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1222. Petals white.

Diffuse, lax, almost glabrous; leaves rather large, deeply divided into three to seven almost lanceolar denticulated or lobed segments; lower leaves suprabasal-stalked; umbels many-flowered; stalklets rather long; fruitlets much compressed, their dorsal angle expanded.
H. geranifolia.

Petals greenish or yellowish 1223

1223. Leaves lobed to near the base.

Almost glabrous, generally prostrate; stems very thin; leaves quite small, cleft nearly to the base into three or five wedge-shaped segments, each of the latter denticulated along the summit; umbels capitular, few-flowered; fruitlets minute, somewhat turgid. **H. tripartita.**

Leaves short-lobed or only crenate 1224

1224. Flowers very numerous in each umbel.

Rather robust, beset with soft hairlets; leaves cordate-orbicular, with short blunt and crenate lobes; umbels of mainly staminate plants containing flowers with long stalklets; umbels of mainly pistillate plants capitular, the petals of the latter dropping coherently; fruitlets nearly truncate, smooth.
(H. laxiflora and H. densiflora.) **H. Candollei.**

Flowers few or several in each umbel. 1225

1225. Dorsal angle of fruitlets unexpanded.

Creeping, beset with soft hairlets; leaves from cordate- to renate-orbicular, blunt- and short-lobed and also crenate; umbels capitular; fruitlets quite small, somewhat compressed, slightly angular, smooth. **H. hirta.**

Dorsal angle of fruitlets broadly expanded.

Creeping, almost glabrous; leaves from cordate- to renate-orbicular, slightly lobed and somewhat crenate; leaf-stalks often of considerable length; umbels capitular; united fruitlets broader than long. **H. pterocarpa.**

1226. Majority of leaves divided to near the base.

Small and sometimes very much reduced in size, nearly glabrous; leaves mostly divided into three wedge-shaped somewhat denticulated lobes or segments; umbels capitular; fruitlets with three rather prominent angles and on each side with a solitary groove, but without any foveoles and wrinkles. **H. callicarpa.**

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Majority of leaves divided to about the middle ... 1227

1227. Dorsal and lateral angles of fruitlets unenlarged.

Very small, nearly or quite glabrous; leaves minute, divided into three entire or somewhat crenulated lobes; umbels capitular, few-flowered, without any bracteal involucre; united fruitlets renate-orbicular, very small, with three thinly prominent angles and on each side with a solitary groove, wrinkled and foveolated between the dorsal and lateral angles. **H. capillaris.**

Dorsal and lateral angles of fruitlets prominently margined.

Very small, nearly glabrous; leaves from rhomboid- to cordate-orbicular, cleft into three entire or somewhat crenulated lobes; umbels capitular; fruitlets with three amply prominent angles, between all the angles wrinkled and foveolated. **H. medicaginoides.**

DIDISCUS.

1228. Tall.

Usually much beset with scattered long spreading hairlets; leaves large, mostly basal, deeply divided into broadish again incised lobes or segments; flowers numerous in each umbel, on conspicuous stalklets; petals white; fruitlets either both or oftener only one developed, usually granular-rough. **D. pilosus.**

Dwarf 1229

1229. Perennial.

An alpine herb; leaves all basal, in outline from ovate- to roundish-rhomboidal, incised into a few bluntish lobes; petals white; both fruitlets developed and smooth.
D. humilis.

Annual 1230

1230. Generally both fruitlets densely beset with ciliolate bristlets.

A weak desert-herb, scantily beset with hairlets; leaves small, divided into few narrow lobes or segments; flowers several in the umbel, head-like crowded; petals blue.
D. cyanopetalus.

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One of the fruitlets smooth or dotted, the other prickly-rough.

Leaves small, deeply divided into few narrow lobes or segments; flowers several in the umbel, head-like crowded; petals white. **D. pusillus.**

TRACHYMENE.

1231. Almost shrubby, robust.

Leaves from orbicular and ovate to narrow-lanceolar, all entire, turning dark in drying; fruitlets granular-rough and somewhat wrinkled. **T. Billardieri.**

Almost herbaceous, weak 1232

1232. Leaves all linear and undivided.

Stems spreadingly branched; leaves very short and narrow, quite acute; fruitlets somewhat wrinkled. **T. ericoides.**

Lower leaves cleft into linear lobes.

Stems slightly or hardly branched, slender; upper leaves very narrow and entire; fruitlets rather broader than long, granular-rough. **T. heterophylla.**

APIUM.

1233. Leaves divided into flat segments and lobes.

Perennial, often maritime and usually prostrate, sometimes fruiting already at a very early age and in quite a minute state; segments of leaves from broad-linear to almost rhomboidal; umbellules often more than three to each umbel; petals white or reddish; involucral bracts all absent; ridglets of fruit thick. "Native Celery." **A. prostratum.**

Leaves divided into capillary-filiform segments and lobes.

Annual, usually erect, very slender; upper leaves almost sessile; umbellules seldom more than three to each umbel; involucral bracts all absent; ridglets of fruit thick. **A. leptophyllum.**

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XANTHOSIA.

1234. Umbel-stalks elongated.

Perennial, rather tall, slender, soon glabrous; leaves mostly basal and long-stalked, divided into three cuneate-rhomboidal and at the upper end indented segments; bracts to each of the umbellules three, broadish, petal-like, whitish; lobes of the calyx almost white; fruit small.
X. Atkinsoniana.

Umbel-stalks abbreviated 1235

1235. Leaves lobeless.

Dwarf, perennial, somewhat velvety and besides beset with scattered hairlets; leaves small, wedge-shaped, with three denticles at the summit; flowers in each umbel few or occasionally reduced to two or one; calyx-lobes fixed above the base. **X. tridentata.**

Leaves lobed 1236

1236. Glabrous.

Dwarf, perennial; leaves cleft into three narrow often subdivided segments, the ultimate lobes acute and mostly narrow; flowers few or several in the umbel; calyx-lobes fixed at the base; fruit dilated towards the base.
X. dissecta.

Vestiture of soft hairlets 1237

1237. Middle lobe of the leaf by far the longest.

Perennial, rather tall, much beset with a dense brownish vestiture and besides with long scattered hairlets; leaves simply sinuous or cleft into three to five lobes; umbels few-flowered; calyx-lobes fixed at the base. **X. pilosa.**

Middle lobe of the leaf slightly longer than the others.

Dwarf, beset with spreading hairlets; leaves on short stalks, cleft into three elliptic or lanceolar entire or incised segments; flowers often only one to three in each umbel; calyx-lobes fixed at the base. **X. pusilla.**

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SESELI.

1238. Segments of lower leaves from lanceolar to broad-linear and partly subdivided.

Alpine herb, erect, perennial; leaves on ample clasping stalks, stem-leaves simply pinnatisected; primary involucres almost or quite absent; secondary involucres of only two or three narrow bracts; fruit ellipsoid, glabrous. **S. Harveyanum.**

Segments of lower leaves from rhomboidal to cuneate, incised and at the upper end denticulated.

Alpine, almost prostrate, greyish-green, perennial; leaves on ample clasping stalks, the basal leaves simply pinnatisected, some of the segments trifid; primary involucres reduced to from one to three narrow bracts; secondary involucres consisting of several bracts; fruit truncate-ovate, only imperfectly known. (Possibly referable to the following genus.) **S. algens.**

SIUM.

1239. Leaflets of stem-leaves irregularly and deeply serrated or somewhat incised.

Stem streaked; leaflets from ovate to lanceolar, sessile; umbels chiefly opposite to leaves; stalklets longer than the fruit; oil-ducts about six between the ridges of the fruitlets, immersed. **S. erectum.**

All leaflets regularly serrulated.

Deleterious; stem furrowed; leaflets from broad- to narrow-lanceolar, sessile; umbels chiefly terminal; stalklets nearly as long as the fruit; oil-ducts about three between the ridges of the fruitlets, prominent. **S. latifolium.**

DAUCUS.

1240. Secondary umbel-stalks few, unequal.

Never tall; leaves comparatively small, doubly pinnatisected, the segments often again incised; leaf-stalks slightly dilated; bracts of secondary involucre very short; petals minute, often reddish; bristlets of fruit barbed at the apex. **D. brachiatus.**

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ERYNGIUM.

1241. Erect.

Glabrous; radical leaves considerably longer than broad, doubly or simply pinnatifid or sometimes merely indented, marked by somewhat raised transverse lines, the segments or lobes generally narrow; umbels compound, capitular, mostly terminal, surpassed by the outer almost spinular bracts; flowers minute. **E. rostratum.**

Prostrate.

Glabrous; radical leaves much longer than broad, simply pinnatifid or merely indented, the lobes generally narrow and unequal; umbels compound, capitular, mostly axillary and short-stalked, much surpassed by the outer almost spinular bracts; flowers minute.
E. vesiculosum.

CUCURBITACEAE.

MELOTHRIA.

1242. Leaves orbicular-cordate, short-lobed.

Prostrate, rough from minute stiff hairlets; lobes of leaves five to seven, somewhat sinuous; staminate and pistillate flowers on the same plant, both minute, on very short stalks; anthers almost sessile; fruit rather small, globular, smooth; seeds several. Figure 77. **M. Muelleri.**

SICYOS.

1243. Fruit beset with barbed bristlets.

Climbing; leaves almost membranous, from ovate- to renate-cordate in outline, angularly three- or five-lobed; flowers minute; staminate flowers racemose, pistillate flowers capitular-crowded, the stalks of either from the same axis; fruit small, almost ovate, but acute.
S. angulata.

PASSIFLORAE.

PASSIFLORA.

1244. Petals and inner side of calyx-lobes crimson.

Nearly glabrous; leaves of rather firm consistence, deeply incised anteriorly, dark-green and wrinkled above; the lobes mostly ovate-semilanceolar; leaf-stalks destitute of glandules; petals less than half as long as the calyx-lobes; circular inner membrane entire, beset with hairlets, shorter than the outer whorl of thread-like segments.
P. cinnabarina.

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LORANTHACEAE.

NOTOTHIXOS.

1245. Leaves mostly from elliptic- to rhomboid-ovate, beneath usually greyish-yellow from a thin vestiture.

Vestiture somewhat powdery, always much developed on the young shoots; leaves opposite, rather flaccid; clusters of flowers stalked, generally three together; fruit small, somewhat succulent. **N. subaureus.**

LORANTHUS.

1246. Anthers fixed at the back.

Glabrous; leaves from orbicular-ovate to lanceolar- or linear-elliptical, unilaterally curved when narrow, thick in structure; flowers in cymes; petals elongated, usually five, often yellowish or somewhat reddish, soon much disconnected; anthers ellipsoid, oscillating; fruit almost pear-shaped, yellowish-green. Figure 66.

L. celastroides.

Anthers fixed at the base 1247

1247. Flowers solitary or in pairs.

Glabrous; leaves firm, from spatular- or narrow-elliptical to broad-linear, flat; flower-stalks very short or undeveloped; petals elongated, usually six, long-coherent below, green at the summit, otherwise red or yellow; filaments often black; anthers narrow; fruit almost ovate, somewhat succulent, outside black.

L. Exocarpi.

Flowers in cymes 1248

1248. Leaves filiform-cylindrical.

Glabrous or imperfectly invested with very short greyish hairlets; leaves sometimes fascicularly crowded; petals usually five, soon disconnected, reddish inside; anthers narrow; fruit globular, succulent, pale-pink outside.

L. linophyllus.

Leaves flat 1249

1249. Flowers mostly provided with ultimate stalklets.

Usually glabrous; leaves from obovate and lanceolar to broad-linear, often elongated and then unilaterally curved, seldom verging into a cordate form; petals usually five, elongated, soon disconnected; fruit brownish-green, quite viscid, distinctly contracted at the summit.

L. pendulus.

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Flowers mostly unprovided with ultimate stalklets.

Always much invested with short grey and often appressed hairlets; leaves from ovate- to narrow-lanceolar, occasionally scattered; cymes often only with two branchlets; petals usually five, soon disconnected; anthers narrow; fruit rather succulent, yellowish outside, hardly contracted at the summit. **L. Quandang.**

PROTEACEAE.

CONOSPERMUM.

1250. Leaves elongated.

Much invested with greyish appressed shining hairlets; leaves broad-linear; total inflorescence only moderately long; spikes very short, corymbously arranged; the two sets of corolla-lobes about as long as the tube. **C. Mitchelli.**

Leaves abbreviated 1251

1251. Leaves very spreading.

Imperfectly invested with appressed short hairlets, scantily branched; leaves crowded, ascendingly curved, from lanceolar- to broad-linear, always acute, considerably narrowed below the middle; spikes very short, on much elongated stalks, the latter from axils of upper leaves; the two sets of corolla-lobes shorter than the tube. Figure 67. **C. patens.**

Leaves slightly spreading.

Imperfectly invested with short hairlets, scantily branched; leaves crowded, from narrow-lanceolar to broad-linear, always acute, placed vertically and often somewhat twisted; spikes very short, on somewhat elongated stalks, the latter from axils of upper leaves; the two sets of corolla-lobes shorter than the tube. **C. taxifolium.**

ISOPOGON.

1252. Involucral bracts longer than the fruit-supporting bracts.

Never tall; leaves very rigid, nearly all repeatedly dissected, narrowed into a long stalk, mostly glabrous, their segments and lobes comparatively broad, much spreading, very pungent; stalk of inflorescence quite short; corolla yellow, almost glabrous, its tube very slender; summit of style dilated and from the pointed stigma by constriction somewhat separated. **I. ceratophyllus.**

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Involucral bracts shorter than the fruit-supporting bracts.

Finally tall; leaves rigid, nearly all doubly or triply dissected, narrowed into a long stalk, soon glabrous, their segments and lobes comparatively narrow, spreading, pungent; stalk of inflorescence quite short; corolla yellow, almost glabrous, its tube very slender; summit of style dilated and from the pointed stigma by constriction somewhat separated. **I. anemonifolius.**

ADENANTHOS.

1253. Branches prostrate.

Much beset with hairlets; leaves crowded, rather small and flaccid, mostly appressed, their segments from three to seven, linear-filiform, erect, glandule-bearing at the apex; flowers terminal; corolla elongated; stigma slender. **A. terminalis.**

PERSOONIA.

1254. Leaves elongated 1255

Leaves abbreviated 1259

1255. Leaves narrow.

Tall, finally arborescent; stem-bark thinly lamellar; leaves elongate-linear, flat, soon almost glabrous; flowers solitary; corolla outside beset with minute hairlets; fruit globular-ovate, greenish outside; cotyledons four to six. **P. linearis.**

Leaves broadish 1256

1256. Corolla nearly or quite glabrous.

Finally arborescent; stem-bark thinly lamellar; leaves almost vertical, generally elliptic-lanceolar, somewhat inequilateral and gently curved, flat, soon glabrous, their venules prominent; flowers often infra-terminally approximated and unsupported by floral leaves; stalklets conspicuous. **P. salicina.**

Corolla invested with minute hairlets outside ... 1257

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1257. Flowers few or several, crowded into short racemes.

Shrub, hardly tall; leaves mostly from lanceolar- to elliptical-ovate, flat; flowers unsupported by floral leaves; corolla densely invested with very short brownish hairlets outside; fruit small, ellipsoid-ovate; cotyledons two. **P. confertiflora.**

Flowers nearly all dispersed singly between the leaves **1258**

1258. Stalklets of flowers conspicuous.

Very tall, finally quite arborescent; leaves mostly elliptic-lanceolar, much elongated, almost flat, beset with subtle hairlets underneath; flowers rather large, occasionally some floral leaves undeveloped; corolla-lobes distinctly pointed; fruit rather large, green-yellowish; cotyledons three. **P. arborea.**

Stalklets of flowers extremely short.

Shrub, rather tall; leaves from narrow- to broad-lanceolar, flat, soon or finally glabrous; venules, except the carinal, much obliterated; flowers occasionally two from the same axil; ovulary glabrous; cotyledons four or five. **P. lanceolata.**

1259. Leaves flat or slightly channelled **1260**

Leaves marginally recurved **1262**

1260. Corolla glabrous.

Dwarf, almost herbaceous, quite glabrous or very scantily beset with hairlets; leaves very spreading, broad-linear, simply acute, flat or channelled, slightly carnulent, even the carinular venule concealed; flowers axillary, solitary; fruit oblique-ovate; cotyledons six. Figure 68. **P. Chamaepeuce.**

Corolla invested outside with hairlets **1261**

1261. Leaves acicular-linear.

Shrub, finally tall; leaves sessile, very spreading, flat or somewhat channelled, pungent-pointed; flowers axillary, solitary; corolla occasionally almost glabrous; fruit ovate-globular; cotyledons four to six. **P. juniperina.**

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Leaves from elliptical- to ovate-lanceolar.

Shrub, hardly tall; leaves rather rigid, spreading, often acute, finally glabrous; flowers almost pendent; corolla-lobes very distinctly pointed; cotyledons four to six.
P. myrtilloides.

1262. **Corolla glabrous.**

A shrubby plant, diffuse or somewhat prostrate; leaves quite small, from lanceolar-elliptical to orbicular, soon glabrous; flowers on conspicuous stalklets; fruit ellipsoid-ovate. **P. oxycoccoides.**

Corolla invested with hairlets outside 1263

1263. **Leaves very pale beneath.**

A shrub, hardly tall; leaves from lanceolar- to obovate-elliptical, blunt, generally retaining some vestiture for a long while beneath; flowers solitary, erect; corolla-lobes slightly pointed. **P. revoluta.**

Leaves hardly paler beneath.

Shrub, rather tall, much beset with soft spreading and often brownish hairlets; leaves from obovate- and spatular- to narrow-lanceolar, much narrowed towards the base, irrespective of the vestiture somewhat rough on both sides; flowers almost sessile, generally solitary, occasionally a few together without floral leaves; cotyledons five.
P. rigida.

TELOPEA.

1264. **Involucral bracts glabrous.**

Finally quite arborescent; branchlets also glabrous; leaves large, firm, mostly obovate-lanceolar, entire, their ultimate venules subtle; corolla crimson, slit unilaterally; glandule at the upper end of the stalklets rather conspicuous. "Gippsland-Waratah." Figure 72. **T. oreades.**

LOMATIA.

1265. **Finally high-arborescent.**

Leaves mostly from lanceolar and broad-elliptical to almost ovate, coarsely serrated, beneath densely beset with appressed and shining hairlets; their ultimate venules faint; petals provided with much outside vestiture; pistil glabrous. **L. Fraseri.**

Shrubby only 1266

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1266. Leaves twice or three times longer than broad.

Leaves from lanceolar-elliptical to nearly ovate, pungent-serrate, soon almost glabrous, also their ultimate venules above prominent; petals glabrescent outside; pistil glabrous. **L. ilicifolia.**

Leaves several or many times longer than broad.

Shrubby or hardly arborescent; leaves elongated, from linear- to narrow-lanceolar, distantly serrated, soon glabrous; their ultimate venules faint; petals often glabrous; pistil glabrous. **L. longifolia.**

ORITES.

1267. Leaves elliptical-lanceolar, flat, lobeless.

Alpine shrub, rather tall; leaves comparatively small, very firm, glabrous; spikes mostly terminal and solitary; flowers small; bracts fugacious; petals whitish, glabrous; fruit beset with appressed shining hairlets. Figure 69. **O. lancifolia.**

GREVILLEA.

1268. Seeds surrounded by a broadish flat membrane.

Leaves long, linear, lobeless or few-lobed, refracted at the margin; racemes elongated; flowers small; corolla outside densely beset with greyish soft hairlets; style glabrous; stigma somewhat lateral; ovulary on a conspicuous stipes; fruit almost globular. **G. pterosperma.**

Seeds surrounded by a very narrow or somewhat obliterated membrane 1269

1269 **Leaves mostly lobed or indented** 1270

Leaves constantly lobeless and also otherwise entire 1276

1270. Prostrate.

Leaves from ovate to elliptical, but often cuneate or even truncate at the base, wavy and prickly denticulated, soon glabrous; racemes dense; flowers small; corolla outside beset with appressed grey shining hairlets; style glabrous; stigma almost lateral; ovulary on a short stipes, invested with silk-like hairlets. **G. repens.**

Erect or diffuse 1271

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1271. Leaves very large.

Leaves often produced into deltoid or semilanceolar lobes, invested beneath with short hairlets; racemes dense, almost spicate; flowers small; corolla outside beset with minute hairlets; style glabrous; stigma slightly lateral; ovulary on a very short stipes; fruit small, pointed.
G. Barklyana.

Leaves moderately large or rather small 1272

1272. Leaves nearly always simply lobed 1273

Leaves nearly always repeatedly lobed 1274

1273. Leaves without denticles at the margin in addition to the lobes.

Leaves mostly ovate-cuneate in outline, with broadish, acute lobes, beneath beset with a silk-like or less frequently with a velvet-like vestiture; racemes dense, almost spicate; flowers rather large; corolla pale, outside densely beset with minute hairlets; style glabrous; stigma somewhat lateral; ovulary on a distinct stipes; fruit almost ovate. **G. ilicifolia.**

Leaves with prickly denticles at the margin in addition to the lobes.

Leaves from lanceolar- to cuneate- or elliptic-ovate in outline, somewhat crisped, with broadish, acute lobes, beneath beset with soft often brownish hairlets; racemes dense, almost spicate; flowers rather large; corolla outside bearing a soft vestiture; style glabrous; stigma slightly lateral; ovulary nearly sessile, densely beset with hairlets. **G. aquifolium.**

1274. Flowers rather large.

Leaves very rigid, simply or doubly pinnatisected, refracted at the margin, their segments broadish-linear, pungent; racemes short; summit of stalklets much descending; corolla red, only near the summit curved, outside beset with appressed hairlets; style slightly longer than the corolla, as well as the ovulary glabrous; stigma almost lateral; fruit on a long stipes, much compressed, hard, oblique-ovate; seeds plane-convex, broadish. Figure 70.
G. Huegelii.

Flowers very small 1275

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1275. Segments of leaves linear.

Leaves twice or thrice ternately cleft, with very narrow pungent segments, refracted at the margin; racemes cylindrical, almost spicate; flowers very small, corolla outside beset with hairlets; style very short; stigma quite terminal. **G. triternata.**

Segments of leaves elliptic- or lanceolar-cuneate.

Leaves mostly twice trifid; their segments or lobes indented at the summit; racemes cylindrical, almost spicate; flowers very small, corolla outside beset with hairlets; style very short; stigma quite terminal.
G. ramosissima.

1276. Corolla partly or quite red 1277

Corolla yellow or pale 1283

1277. Corolla almost or quite glabrous outside 1278

Corolla extensively beset with short hairlets outside 1281

1278. Leaves pointed, almost glabrous on the upper side.

Leaves from narrow- to lanceolate-linear, revolute at the margin, beset with silky-shining hairlets underneath; racemes very short, almost corymbous, somewhat bending downward; corolla rosy-red except towards and at the pale summit; style densely beset with hairlets; stigma almost lateral; ovulary sessile; fruit nearly ellipsoid.
G. ericifolia.

Leaves blunt, beset with short soft hairlets also much on the upper side.

Leaves rather short, from elliptic- to broad-linear, revolute at the margin; racemes very short; corolla reddish, except at and near its summit; style beset with short hairlets, much exserted; stigma almost lateral; ovulary sessile; fruit nearly ellipsoid. **G. lanigera.**

1279. Leaves comparatively small 1280

Leaves comparatively large 1281

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1280. Flowers in very short racemes.

Erect or diffuse; leaves from oval to linear-elliptical, recurved at the margins, underneath beset with an almost velvety vestiture; lower portion of corolla deep-red or orange-colored, upper gradually yellowish; style only slightly longer than the corolla; ovulary sessile, as well as the style beset with short hairlets; stigma almost lateral; fruit nearly ellipsoid. Never alpine.
(G. Dallachiana.) **G. alpina.**

Flowers almost umbellate.

Never tall; leaves from linear- to elliptic-lanceolar, recurved at the margin, beneath beset with a silk-like vestiture; stalklets of flowers at the summit descendingly truncate; corolla rosy-red except towards the pale summit, often somewhat invested outside; style conspicuously exserted, not rarely glabrous; ovulary on a short stipes, beset with a short vestiture; stigma almost lateral; fruit oblique-ellipsoid, pointed. **G. lavandulacea.**

1281. Racemes elongated.

Tall; leaves usually elongate-lanceolar, beneath beset with a silk-like vestiture; racemes bent downward; corolla outside invested with almost copper-colored hairlets; style nearly glabrous; stigma almost lateral; ovulary glabrous, on a short stipes; fruit oblique-ellipsoid.
G. Victoriae.

Racemes abbreviated 1282

1282. Pistil considerably longer than the corolla.

Usually somewhat diffuse; leaves very firm, from narrow-lanceolar to broad-linear, beneath beset with a silk-like vestiture; corolla bright-red, outside invested with shining appressed hairlets; style and ovulary glabrous, the latter on a conspicuous stipes; stigma almost lateral; fruit oblique-ellipsoid. **G. oleoides.**

Pistil slightly longer than the corolla.

Erect; leaves mostly from elliptic to ovate, beset with soft hairlets beneath, the secondary venules rather prominent; corolla dull-red, outside laxly invested; ovulary glabrous, on a short stipes; fruit oblique-ellipsoid.
G. Miqueliana.

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1283. Corolla quite yellow inside.

Leaves from narrow-elliptical to oval, recurved at the margin, beset underneath with a velvety vestiture; racemes moderately short; corolla brown-velvety invested outside; ovulary sessile, as well as the style densely beset with short hairlets; style only slightly exserted; stigma almost lateral; fruit ellipsoid-ovate.
G. floribunda.

Corolla pale inside 1284

1284. Leaves recurved at the margin.

Alpine shrub; leaves rather small, from narrow- to elliptic-lanceolar, pungent, beset underneath with silk-like vestiture; flowers very small, in almost umbel-like racemes; corolla beset with grey shining hairlets outside; ovulary glabrous; stigma almost lateral; fruit nearly ellipsoid.
G. Australis.

Leaves closely repressed at the margin 1285

1285. Pistil considerably longer than the corolla.

Leaves crowded, linear, rigid, pungent-pointed; corolla very small, beset outside with silk-like grey vestiture; ovulary glabrous, on a short stipes; stigma almost lateral.
G. confertifolia.

Pistil hardly longer than the corolla.

Leaves quite linear, slightly pointed; flowers very small, in umbel-like racemes; corolla beset with silk-like grey vestiture outside; ovulary glabrous; stigma almost lateral; fruit nearly ellipsoid. **G. parviflora.**

HAKEA.

1286. Stigma depressed, almost lateral 1287

Stigma conical, almost or quite terminal 1294

1287. Leaves dissimilar in form.

Upper leaves mainly filiform, lower often from channelled-linear to narrow-lanceolar; flowers small, in sessile axillary umbels; petals whitish, glabrous; fruit comparatively small and particularly narrow, somewhat ellipsoid, rather compressed, with two very short infra-terminal points, otherwise blunt. **H. microcarpa.**

Leaves all similar in form 1288

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1288. Leaves flat 1289

Leaves filiform 1290

1289. Corolla glabrous.

Tall-shrubby; leaves from narrow- to broad-lanceolar, occasionally verging into an elliptic form, greyish-green, the lateral venules subtle and much concealed; flowers small, in sessile axillary umbels, fragrant; petals whitish, glabrous; fruit very turgid, but much narrowed towards the base, attenuated into the slightly truncated apex; seeds rather narrow. **H. saligna.**

Corolla outside beset with a close vestiture.

Tall-shrubby or finally even arborescent; leaves greyish-green, elongate-lanceolar, their lateral venules faint and much concealed; flowers small, in axillary sessile umbels; stalklets beset with short hairlets as well as the petals outside; fruit rather large, oblique-ovate, nearly blunt. **H. eriantha.**

1290. Corolla bright-yellow.

Leaves rather short, compressed-filiform; flowers minute, ... in sessile axillary umbels; petals glabrous; fruit comparatively large, oblique-ovate, turgid, nearly blunt, often verrucular-rough. **H. nodosa.**

Corolla whitish or pale 1291

1291. Flowers in short racemes.

Finally tall; branches hardly spreading; leaves greyish-green, pungently straight-pointed; flowers small, crowded; stalk of inflorescence densely beset with short hairlets; petals yellowish-white, nearly always glabrous; fruit almost ovate, somewhat compressed towards the summit, slightly enlarged under the acute apex; membranous appendage of the seeds quite pale. **H. leucoptera.**

Flowers in umbel-like clusters 1292

1292. Terminating membrane of the seeds pale.

Finally tall; leaves light-green, pungently curved-pointed; umbels axillary, sessile; petals outside beset with short brownish hairlets; fruit nearly ovate, somewhat compressed towards the summit, slightly enlarged under the acute apex. (H. Pampliniana.) **H. vittata.**

Terminating membrane of the seeds dark 1293

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1293. Fruit ending in two small horn-like excrescences.

Finally rather tall; leaves very rigid, pungently straight-pointed, beneath with an imperfect furrow; umbels axillary, almost sessile; stalklets and often also the young branchlets beset with shining hairlets; petals whitish or somewhat pink, glabrous; fruit comparatively large, very turgid, wrinkled-rough, suddenly compressed from near the summit. (H. acicularis.) **H. sericea.**

Fruit almost or quite blunt.

Leaves much elongated, thinly filiform, rather lax, conspicuously pointed, underneath with a slight longitudinal furrow; umbels axillary, few-flowered, almost glabrous; flowers quite small; fruit comparatively large, nearly ovate, very turgid, outside densely verrucular-rough, except at the much compressed summit.

H. Macraeana.

1294. Leaves dissimilar in form.

Seldom tall; leaves from compressed-filiform to trigonous-linear or the lower flattened to elongate-lanceolar, all pointed; umbels axillary, solitary, sessile, glabrous; flowers quite small; fruit oblique-ovate, turgid, simply acute, almost smooth. (H. flexilis.) **H. ulicina.**

Leaves all similar in form 1295

1295. Fruit pungently straight-pointed.

Leaves generally rather short, spreading, pungent-pointed; umbels axillary, sessile, few-flowered; petals outside invested with short hairlets; fruit comparatively slender, beset across the middle with acute excrescences.

H. pugioniformis.

Upper portion of fruit much recurved 1296

1296. Fruit comparatively large.

Seldom tall; leaves comparatively long, filiform, pungently straight-pointed; umbels axillary, sessile; flowers small; petals outside beset with appressed greyish shining hairlets; fruit wrinkled-rough, somewhat turgescent at the base, closely recurved in its upper gradually much attenuated portion. Figure 71. **H. rostrata.**

Fruit comparatively small.

Never tall; leaves comparatively short, spreading, filiform, pungently straight-pointed; umbels axillary, sessile, few-flowered; petals outside beset with appressed greyish shining hairlets; fruit wrinkled-rough, its reflexed prolongation formed by the much enlarged hardened and finally split style. **H. rugosa.**

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BANKSIA.

1297. Style permanently hooked.

Tall-shrubby; leaves broad-linear, sharply serrated, white underneath from a close thin vestiture; corolla yellow or towards the summit reddish, outside beset with appressed hairlets; style dark-colored, shining; fruits glabrous.
B. collina.

Style finally straight 1298

1298. Leaves acute at the summit.

Finally tall-arborescent; leaves very firm, from elliptic- to elongate-lanceolar, usually quite entire, some almost crowded into whorls, white underneath from a close vestiture; ultimate venules rather conspicuous; style yellowish; fruit-vestiture thin. **B. integrifolia.**

Leaves excised or truncate at the summit 1299

1299. Leaves irregularly or scantily denticulated or quite entire.

From dwarf-shrubby to tall-arborescent; leaves from broad-linear to elliptic-lanceolar, often recurved at the margin, sometimes comparatively small, always white underneath from a close thin vestiture; ultimate venules much concealed; corolla yellow, beset with appressed hairlets outside; style yellowish; fruits glabrescent. Figure 73.
B. marginata.

Leaves regularly serrated 1300

1300. Corolla outside invested with appressed hairlets.

Finally arborescent; leaves cuneate-lanceolar, underneath beset with greyish hairlets; main-venules costular; corolla yellowish; fruit-vestiture conspicuous.
B. serrata.

Corolla outside invested with spreading hairlets.

Permanently shrubby, but tall at last; leaves cuneate-elliptical, nearly glabrous underneath; main-venules costular; corolla dull-yellowish or assuming a somewhat reddish hue; fruit-vestiture very conspicuous.
B. ornata.

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SANTALACEAE.

EXOCARPOS.

1301. **Shrubby** 1302

Arborescent 1305

1302. **Fruit-stalklet pale-lilac.**

Erect, finally tall, often riparian; branchlets angular; leaves rudimentary, linear, pointed; flowers from very few in each cluster reduced to two; fruit-stalklets very succulent. **E. stricta.**

Fruit-stalklet bright-red 1303

1303. **Erect.**

Desert-shrub; branchlets robust, hardly angular; leaves rudimentary, scale-like; flowers few in each cluster; fruit-stalklets very succulent, broader than long. **E. aphylla.**

Depressed 1304

1304. **Leaves mostly scattered.**

Alpine plant; branchlets robust, cylindrical, their internodes rather elongated; leaves rudimentary, scale-like; flowers from very few in each cluster reduced to two, usually four-lobed; fruit-stalklets very succulent. **E. humifusa.**

Leaves mostly opposite.

Alpine plant; branchlets slender, compressed, their internodes much abbreviated; leaves rudimentary, scale-like, very minute; flowers usually five-lobed. **E. nana.**

1305. **Branchlets somewhat spreading.**

Finally quite tall; leaves rudimentary, scale-like; flower-spikes very small, short-stalked; fruit-stalklets bright-red, very succulent, longer than broad. "Native Cherry-tree." **E. cupressiformis.**

Branchlets pendent.

Leaves slightly elongated, linear, long-pointed; flowers in short-stalked small spikes; fruit-stalklets almost dry, greenish. Figure 65. **E. spartea.**

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SANTALUM.

1306. Tube of the calyx free in its upper part.

Leaves from narrow- to lanceolar-elliptical, hardly pointed, recurved at the margin, dark-green above, paler beneath; flowers few in each cyme; fruit comparatively small, bluish-black outside. **S. obtusifolium.**

Tube of the calyx entirely adnate 1307

1307. Inner hard part of the fruit (endocarp) deeply wrinkled and grooved.

Leaves generally narrow-lanceolar, flat, greyish-green, curved-pointed; flowers several in each cyme; fruit comparatively large, outside succulent and bright-red. "Quandang." **S. acuminatum.**

Inner hard part of the fruit slightly wrinkled and grooved.

Leaves from linear- to narrow-lanceolar, flat, greyish-green, curved-pointed, occasionally ternate; flowers several in each cyme; fruit comparatively large, outside almost dry and brownish-red. **S. persicarium.**

THESIUM.

1308. Racemes spike-like.

Glabrous, slender and weak plant; leaves, except some of the lower, almost linear, slightly decurrent; racemes lax; flowers supported by short bracteoles and a narrow somewhat adnate bract; tube of the corolla about as long as the lobes; fruit from ovate to almost globular. **T. Australe.**

OMPHACOMERIA.

1309. Leaves entirely absent.

Branchlets rigid, without any prominent angles, subtle-streaked; flowers sessile, the staminate clustered; corolla-lobes yellow inside, oftener four than five; stigma bilobed; fruit nearly ovate, greenish outside. **O. acerba.**

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CHORETRUM.

1310. Flower-clusters arranged in racemes 1311

Flowers simply arranged in spikes or scattered ... 1312

1311. Corolla white.

Branchlets rather lax, angular; leaves minute, pointed; flower-clusters short-stalked; bracts and bracteoles roundish; corolla cleft into nearly distinct petals; stigma five-lobed; fruit ovate-globular, greenish.
C. glomeratum.

Corolla yellow.

Branchlets rather lax, angular; leaves minute, pointed; flower-clusters short-stalked; bracts and bracteoles from ovate to orbicular; corolla cleft into nearly distinct petals; stigma five-lobed; fruit globular-ovate, greenish. Figure 64.
C. chrysanthum.

1312. Flowers quite sessile.

Branchlets rather rigid, slightly streaked; leaves minute, curved, much pointed, at first crowded; flowers solitary, generally crowded into rather long spikes, each surrounded by brown bracts and bracteoles; fruit ovate-globular.
C. spicatum.

Flowers slightly stalked.

Branchlets rather lax, slightly streaked; leaves minute, much pointed; flowers solitary, each surrounded by bracts and bracteoles, generally somewhat distant; corolla white, each segment beset inside with a tuft of yellow very minute hairlets; fruit ovate-globular, pale.
C. lateriflorum.

LEPTOMERIA.

1313. Flowers in rather elongated spikes.

Branchlets distinctly angular, bluntish at the apex; leaves minute, narrow, pointed; corolla yellowish-brown; stigma five-lobed; fruit globular-ovate, outside reddish.
L. acida.

Flowers in quite abbreviated spikes.

Branchlets very rigid, hardly angular, spinescent; leaves minute, pointed, fugacious; corolla soon black-purplish; stigma five-lobed; fruit from ellipsoid- to globular-ovate, greenish outside.
L. aphylla.

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RUBIACEAE.

MORINDA.

1314. Climbing or twining.

Glabrous; leaves rather large, from lanceolar to almost ovate; headlets in pairs, on short stalks, with about a dozen or less seldom more flowers; calyx lobeless; corolla rather small, pale yellow-brownish, its tube slender; ripe fruit-masses reddish outside. **M. jasminoides.**

OPERCULARIA.

1315. Fruit-masses on erect stalks.

Erect or diffuse, beset with short rigid hairlets; leaves rather small, from linear- to elliptic-lanceolar; compound headlets of flowers generally on long stalks; lobes of the calyx narrow, pointed, persistent; stamens four; seeds obtusangular. **O. scabrida.**

Fruit-masses on recurved stalks 1316

1316. Leaves usually twice or three times longer than broad 1317

Leaves usually several times longer than broad ... 1318

1317. Seeds transversely wrinkled.

Erect or diffuse, much beset with hairlets; leaves rather small, from lanceolar to ovate; stalk of inflorescence short; headlets ten or less in each inflorescence, small, three- to five-flowered; corolla generally five-cleft; stamens usually one or two; seeds without any prominent longitudinal lines. **O. hispida.**

Seeds without transverse wrinkles.

Erect or diffuse, not seldom almost glabrous; leaves from lanceolar- to rhomboidal-ovate, on very short stalks; compound headlets also short-stalked; calyx-lobes generally three, semilanceolar; stamens three to four, much exserted; seeds furrowed along the inner side. **O. ovata.**

1318. Stamens three to five.

Erect or diffuse, somewhat tall, not seldom beset with short hairlets; leaves rather large, from broad- to narrow-lanceolar, almost membranous; stalk of inflorescence short; headlets twenty or variously less in each inflorescence, from two- to six-flowered; lobes of the calyx acute; corolla three- to five-lobed; seeds conspicuously wrinkled, prominently two-lined. **O. aspera.**

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Stamens two.

Erect or diffuse, generally beset with short hairlets; leaves rather small and firm, from broad-linear to narrow-lanceolar and elliptical; stalk of inflorescence very short; headlets usually three- or four-flowered; lobes of the calyx very narrow, acute; seeds somewhat wrinkled, prominently two-lined. **O. varia.**

POMAX.

1319. Each headlet of flowers on a separate elongated stalk.

Often rather dwarf, usually beset with short hairlets; leaves from narrow- to ovate-lanceolar, the floral leaves mostly whorled; headlets generally three- or four-flowered; encircling calyx-lobes deltoid; lid above flat and orbicular, deciduous; corolla small, three- to five-lobed; stamens three to five, conspicuously exserted; seeds wrinkled-rough. **P. umbellata.**

COPROSMA.

1320. Erect 1321

Depressed 1323

1321. Flowers few together in each cluster.

Shrubby, minutely rough and usually beset with scattered very short hairlets; leaves comparatively large, from lanceolar-ovate to almost rhomboid, somewhat succulent, shining, sharp-pointed; flowers terminal, rarely reduced to two or even one; stalklets very short; denticles of calyx four or five or rarely more, minute; lobes of corolla longer than the tube; stamens four to seven; fruit rather large, red or brown-yellowish outside. **C. hirtella.**

Flowers solitary 1322

1322. Leaves of thin texture.

Finally tall-shrubby; branchlets spinescent; leaves small, from narrow- to ovate-lanceolar, smooth and glabrous; flowers axillary, very small; denticles of calyx four, minute; lobes of the corolla longer than the tube; fruit pendent, ovate-ellipsoid, bright-red outside. **C. Billardieri.**

Leaves of thick texture.

Alpine shrub; leaves glabrous, quite small, from narrow- to lanceolar-elliptical, shining, recurved at the margin; flowers small; corolla greenish-white, lobes four, longer than the tube; fruit from ellipsoid to almost globular, outside bright-red. **C. nitida.**

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1323. Somewhat woody.

Alpine plant, widely prostrate; leaves thick, very small, blunt, from narrow- to ovate-elliptical, shining; flowers solitary; corolla of staminate flowers with elongated tube, that of the pistillate flowers with abbreviated tube; stamens particularly long-exserted; fruit ovate-globular, outside red. **C. pumila.**

Quite herbaceous 1324

1324. Calyx almost lobeless.

Glabrous, forming dense very depressed patches; leaves minute, thin, from ovate- to cordate-orbicular; flowers solitary; corolla very short, pale, four-lobed; stamens and pistils well developed in most flowers, but the filaments often abbreviated in the fruit-forming flowers; fruit very small, almost globular, red or bright-yellow outside. **C. Nertera.**

Calyx conspicuously two-lobed.

Quite dwarf, somewhat creeping and tufted; leaves very small, on short stalks, thin, ovate, slightly pointed, often beset with short scattered and rather rigid hairlets; flowers solitary; corolla elongated; fruit nearly ovate, almost dry. **C. reptans.**

ASPERULA.

1325. Leaves simply opposite.

Stems and branches rather elongated, lax; leaves never whorled, always linear; flowers minute, well stalked; calyx lobeless; corolla whitish, four-lobed, that of the main staminate flowers with a conspicuous tube, that of the main pistillate flowers tubeless; fruit minute, consisting of two oblique-ovate turgid finally seceding fruitlets. Figure 75. **A. geminifolia.**

Leaves from four to eight in each whorl.

Dwarf, erect or diffuse; leaves small, from linear to oval; flowers minute, terminally crowded, but never numerous; calyx lobeless; corolla whitish, four-lobed, that of the main staminate flowers with a conspicuous tube, that of the main pistillate flowers tubeless; fruit minute, slightly two-lobed. (A. conferta.) **A. oligantha.**

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GALIUM.

1326. Fruit smooth and glabrous.

Stems often short and erect, mostly somewhat rough from minute hairlets; leaves small, generally four in each whorl, from broad-linear to ovate-lanceolar; flowers minute, axillary crowded, but never numerous; flower-stalks mostly abbreviated; calyx lobeless; corolla whitish or yellowish, four-lobed; fruit minute, slightly two-lobed. **G. umbrosum.**

Fruit rough and beset with hooked hairlets.

Stems often elongated and diffuse or prostrate, mostly beset with short clinging hairlets; leaves generally four in each whorl, from narrow-lanceolar to ovate; flowerstalks mostly elongated, with few minute flowers on conspicuous capillary stalklets; fruit minute, tardily seceding into two fruitlets. **G. Australe.**

CAPRIFOLIACEAE.

SAMBUCUS.

1327. Arborescent.

Lowest segments of the leaves distant from the branchlets; corolla-lobes and stamens three or rarely four; fruit yellowish. Figure 76. **S. xanthocarpa.**

Almost herbaceous.

Lowest segments of the leaves close to the branchlets; corolla-lobes and stamens three or rarely four; fruit whitish. **S. Gaudichaudiana.**

COMPOSITAE.

MICROSERIS.

1328. Fruits slightly narrowed into the somewhat truncate summit.

Almost glabrous; root fascicular, edible, lactescent; leaves elongated, their lobes rather short and narrow; headlets of flowers amply expanding; receptacle bractless; involucral bracts in several rows, acute, the innermost row far the longest; corolla of central flowers very narrow; fruit slender; pappus-bristlets mostly biseriate, occasionally plumous-ciliolated. **M. Forsteri.**

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CYMBONOTUS.

1329. Leaves almost ovate, underneath white from a close vestiture.

Stems generally shorter than the leaves, producing solitary headlets of flowers; receptacle very imperfectly bract-bearing or bractless; marginal flowers pistillate only; fruit glabrous, dorsally turgid and prominently few-streaked. **C. Lawsonianus.**

ADENOSTEMMA.

1330. Leaves from elliptical- and cuneate-lanceolar to rhomboid- and cordate-orbicular.

Leaves rather large, the upper short-stalked or almost sessile; involucral bracts narrowly lanceolar-elliptical, of nearly equal length; no bracts between the flowers; corolla beset with minute hairlets outside; anthers without any conspicuous terminal appendage; pappus short; fruits somewhat rough, few-angular. **A. viscosum.**

BIDENS.

1331. Leaves usually three- to five-cleft.

Annual, often glabrous; leaves occasionally undivided and sometimes the upper alternate; segments generally lanceolar, serrated; outer involucral bracts spreading, longer than the inner; long-expanding marginal flowers yellow, but not rarely absent; fruits much compressed, obovate, rough along the margin from reversed asperities. **B. tripartitus.**

GLOSSOGYNE.

1332. Segments of leaves linear.

Perennial, glabrous, seldom tall; segments of leaves rather short and acute, oftener lobeless than lobed, those of the upper leaves much reduced; headlets of flowers comparatively small; stigmas very thin, elongated; fruits narrow, longitudinally streaked; pappus-spinules without any curvature. **G. tenuifolia.**

ECLIPTA.

1333. Corolla of all flowers yellow, those of the marginal flowers with broadly flattened lamina.

Perennial, prostrate or ascending, beset with short appressed rigid hairlets; leaves entire, from narrow-lanceolar to broad-linear; headlets of flowers small, on axillary generally elongated stalks; outer involucral bracts almost lanceolar; fruit slender, somewhat hollowed at the summit. Figure 87. **E. platyglossa.**

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SIEGESBECKIA.

1334. Corolla of the marginal flowers expanding into an indented lamina.

Rather tall, beset with short hairlets; leaves from deltoid-rhomboid to narrow-lanceolar, irregularly indented; headlets of flowers small, conspicuously stalked; outer involucral bracts few, usually much exceeding the inner in length, beset with glandule-bearing short hairlets; expanding lamina of the marginal flowers very short, yellow; fruits somewhat turgid. **S. orientalis.**

LEUZEA.

1335. Segments of leaves mostly semilanceolar, slightly indented.

Almost or quite branchless; vestiture scanty, somewhat cottony or consisting of minute hairlets; leaves occasionally lobeless; marginal flowers also staminate and pistillate; lobes of the corolla rather long, tube very slender; fruits truncate, hardly compressed, subtle-streaked. **L. Australis.**

VERNONIA.

1336. Leaves from obovate to broad-linear, imperfectly denticulated.

Herbaceous, often somewhat beset with a thin rather cottony vestiture; upper leaves gradually narrower; headlets of flowers small, on slender stalks, forming terminal corymbs; involucral bracts quite narrow, acute; fruits closely invested with short hairlets. **V. cinerea.**

PLUCHEA.

1337. Headlets of flowers hemiellipsoid-cylindrical.

Shrubby, grey from a thin close vestiture; leaves small, from spatular- to obovate-cuneate, sessile, flat, entire, invested on both sides; headlets of flowers singly terminal, sessile; involucral bracts in many rows, blunt; staminate and pistillate flowers mainly in separate headlets, never numerous; corollas very slender throughout; fruits thin, glabrous; bristlets of pappus slightly plumous. **P. conocephala.**

CALOTIS.

1338. Comparatively tall 1339

Dwarf 1345

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1339. Expansions of the marginal corollas bluish or violet or white 1340

Expansions of the marginal corollas yellow 1342

1340. Pappus consisting of spinules only.

Much beset with hairlets; root producing off-shoots; stems hardly branched; lower leaves from ovate- to linear-cuneate, bluntly short-lobed; upper leaves few and small; headlets of flowers comparatively large; spinules of pappus about eight, alternately larger and smaller, barbed. **C. scabiosifolia.**

Pappus consisting of spinules and scales 1341

1341. Scales of the pappus broader than long.

Vestiture without glandules; branches leafy; leaves lax, dilated upwards and incised, clasping with broad base; headlets of flowers comparatively large; spinules of pappus two or three, slender, barbed, alternating with broad distinct scales. **C. cuneifolia.**

Scales of the pappus longer than broad.

Beset with short glandule-bearing hairlets; stems prostrate or ascendent, leafy; leaves from obovate- to elliptic-cuneate, upwards lobed; headlets comparatively large; spinules of pappus two to seven, thin, barbed, alternating with elliptic-cuneate scales. **C. glandulosa.**

1342. Spinules of the pappus always two.

Imperfectly beset with hairlets; branches leafy; leaves from linear- to elliptical-cuneate, upwards indented; headlets of flowers comparatively large; spinules of pappus barbed, dilated downwards, without interjacent scales. Figure 80. **C. cymbacantha.**

Spinules of the pappus more than two 1343

1343. Spinules of the pappus connate towards their base.

Almost glabrous, branched; leaves distant, from broad- to lanceolar-linear; headlets of flowers comparatively large; spinules of pappus three to five, nearly equal, broadly united at the base, hardly barbed, without interjacent scales. **C. erinacea.**

Spinules of the pappus disconnected 1344

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1344. Pappus longer than the fruit.

Branched, somewhat beset with hairlets; lower leaves elliptic-cuneate, somewhat indented, the upper narrow and entire; headlets of flowers comparatively small; spinules of the pappus four to eight, short, unequal, barbed. **C. lappulacea.**

Pappus shorter than the fruit.

Branched, somewhat beset with hairlets; leaves small, mostly elliptic-cuneate, often denticulated; headlets of flowers minute; spinules of the pappus six to eight, exceedingly short, barbed. **C. microcephala.**

1345. Expansions of the marginal corollas minute.

Annual, dwarf or prostrate, much beset with short rigid hairlets; leaves small, from obovate- to lanceolar-cuneate, entire or at the summit indented; headlets of flowers small, on short stalks or almost sessile; spinules of the pappus four to eight, very short and thin, barbed, mostly alternating with cleft scales. **C. hispidula.**

Expansions of the marginal corollas conspicuous ... 1346

1346. Fruits beset with cottony vestiture.

Annual; leaves from elliptic- to lanceolar-cuneate, entire or somewhat denticulated; headlets of flowers small; expansions of the marginal flowers violet or white; pappus of several or numerous minute capillary barbed bristlets. **C. plumulifera.**

Fruits except their spinules glabrous 1347

1347. Leaves entire or indented.

Almost glabrous; off-shoots rooting; leaves nearly all radical, in tufts, from linear to narrow-lanceolar, entire or somewhat denticulated; headlets of flowers small, singly terminal; expansions of the marginal flowers violet or white; spinules of the pappus several, alternately strong and much thinner, almost barbed with reversed hairlets. **C. scapigera.**

Leaves deeply cleft into very narrow segments.

Almost glabrous; off-shoots rooting; leaves nearly all radical, in tufts, pinnatisected, the lobes linear and partially subdivided; headlets of flowers small, singly terminal; expansions of the marginal flowers violet or white; spinules of the pappus six to eight, short, unequal, barbed. **C. anthemoides.**

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MINURIA.

1348. Expansions of the marginal corollas yellow.

Glabrous desert-plant, never tall, slightly woody; leaves very small, semicylindric-linear, greyish-green, often hooked-curved at the end, somewhat succulent and decurrent; headlets of flowers very small, on short stalks; involucral bracts in about two rows of almost equal length; expanding lamina of marginal flowers very short; pappus tubular towards the base or with some disconnected bristlets; fertile fruits glabrous.

M. suaedifolia.

Expansions of the marginal corollas white or bluish 1349

1349. Expansions of the marginal corollas abbreviated.

Desert-plant, neither tall nor woody, either glabrous or somewhat beset with a cottony vestiture; leaves from broad- to linear-lanceolar, greyish-green, entire or distantly denticulated; headlets of flowers small, conspicuously stalked; involucral bracts narrow, short; marginal flowers numerous, their expanding lamina bluish or white, very narrow; pappus of fertile fruits consisting of disconnected bristlets, that of the sterile fruits much reduced and in part minutely scale-like.

M. Candollei.

Expansions of the marginal corollas elongated ... 1350

1350. Fruits of the ray-flowers almost glabrous.

Rather tall desert-plant, always glabrous, somewhat woody; leaves semicylindric-linear, almost succulent, quite entire, often acute; headlets of flowers comparatively large, conspicuously stalked; involucral bracts of unequal length; lamina of ray-flowers rather long-extended, generally whitish; pappus of marginal flowers consisting of many capillary disconnected bristlets, that of the central flowers much reduced, partly scale-like; fertile fruits slender. Figure 79. **M. Cunninghami.**

Fruits of the ray-flowers densely beset with a silk-like vestiture.

Usually a desert-plant, never tall, often almost glabrous, hardly woody; leaves from broad- to narrow-linear, mostly acute, quite entire; headlets of flowers com-

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paratively large, often conspicuously stalked; involucral bracts of unequal length; lamina of ray-flowers rather long-extended, generally bluish; pappus of marginal flowers consisting of capillary disconnected hairlets, that of the central flowers much reduced, partly scale-like.
M. leptophylla.

ERIGERON.

1351. Headlets of flowers several in a panicle.

Tall perennial sub-alpine plant, branched and nearly glabrous; leaves from broad-linear to lanceolar, the lower elongated and distantly denticulated; involucral bracts very narrow, much pointed; ray-flowers in about two rows, whitish; fruits scantily beset with hairlets.
E. conyzoides.

Headlets of flowers singly terminal **1352**

1352. Stems branchless.

Perennial, but quite herbaceous, never tall, here alpine; radical leaves from obovate- to linear-lanceolar, entire or somewhat denticulated; stem-leaves much reduced in number and size; involucral bracts mostly linear-lanceolar; ray-flowers in about two rows, the expansions generally violet; fruits glabrous. **E. pappochromus.**

Stems branched.

Coast-plant, slightly woody, never tall, generally ascending or diffuse; leaves very small, narrow-linear; ray-flowers in several rows; bristlets of pappus comparatively few, slightly plumous. **E. minurioides.**

VITTADINIA.

1353. Fruits streaked, shorter than the pappus.

Perennial herb, finally somewhat woody, usually rather dwarf and much beset with hairlets; branches leafy; leaves often small, from spatular-obovate to narrow-linear, entire or somewhat indented or even incised, their upper end often folded inward; ray-flowers sometimes reduced to two rows, often bluish; stigmas pointed; pappus-bristlets rather long, occasionally slightly plumous; fruits somewhat elongated, beset with short hairlets.
V. Australis.

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ASTER.

1354. Quite herbaceous.

Alpine tufted plant; stems branchless; leaves mostly radical, from broad-linear to elongate-lanceolar, recurved or revolute along the margin, clasping with broad base, beset with a silvery-silklike finally deciduous vestiture above and with a velvetlike indument underneath; stem-leaves much shortened or bract-like; flower-headlets large, singly terminal; involucral bracts acute; radiating expansions of marginal flowers white or slightly purplish; fruits beset with silk-like vestiture. **A. Celmisia.**

Nearly or fully shrubby 1355

1355. Leaves opposite or axillary-clustered 1356

Leaves scattered 1365

1356. Leaves opposite, large 1357

Leaves clustered, small 1359

1357. Leaves comparatively narrow.

Alpine shrub, evergreen and rather tall; leaves very firm, elongated, from broad-linear to narrowly lanceolar-elliptical, entire, slightly recurved along the margin, glabrous above, densely beset with silk-like greyish vestiture beneath; headlets of flowers rather small, on slender stalks in corymbous or trichotomous panicles; floral ray whitish; fruits glabrous. **A. alpicola.**

Leaves comparatively broad 1358

1358. Leaves densely beset with brownish velvet-like vestiture underneath.

An alpine or sub-alpine shrub, rather tall; leaves firm, from elliptical to almost ovate, flat, entire, above glabrous, the vestiture beneath without lustre; headlets of flowers in corymbous panicles; floral ray white; fruits invested with short hairlets. **A. megalophyllus.**

Leaves thinly beset with whitish silk-like vestiture underneath.

Finally tall; leaves of thin texture, from lanceolar to elliptical, entire, flat, sticky; headlets of flowers rather small, in cymous panicles; flowers comparatively few within each involucre; corollas of central flowers pale; ray reduced to four or fewer expansions, white or violet-coloured; fruits nearly glabrous. **A. viscosus.**

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1359. Vestiture much consisting of simple septate hairlets.

Shrub, seldom tall, invested extensively with minute glandule-bearing hairlets; leaves short, linear, soon recurved along the margin; headlets of flowers short, terminally sessile, forming narrow leafy panicles; floral ray bluish; fruits beset with short hairlets.

A. Benthami.

Vestiture consisting of somewhat cottony hairlets ... 1360

1360. Marginal corollas with a minute flat expansion .. 1361

Marginal corollas with a very conspicuous flat expansion 1362

1361. Flowers few within each involucre.

Rather tall; leaves linear, somewhat elongated, revolute at the margin, many in clusters; headlets of flowers very small, axillary, nearly sessile; involucral bracts blunt; expansions of marginal corollas almost obliterated; fruits beset with hairlets. **A. tubuliflorus.**

Flowers several within each involucre.

A coast-shrub, rather tall; leaves somewhat elongated, from obovate-cuneate to linear, revolute at the margin; headlets of flowers axillary, sessile, small; involucral bracts blunt; expansions of marginal corollas almost obliterated; fruits usually beset with hairlets.

A. axillaris.

1362. Flowers several within each involucre 1363

Flowers few within each involucre 1364

1363. Leaves from orbicular- to elliptic-ovate.

Shrub, rather tall, much beset with very minute but usually spreading hairlets; leaves very small, recurved at the margin, many in clusters, somewhat cottony underneath; headlets of flowers quite small, mostly on abbreviated branchlets singly terminal; floral ray white; fruits beset with very short hairlets. **A. microphyllus.**

Leaves almost linear.

Shrub, finally tall, much beset with minute but usually spreading hairlets; leaves very small, soon much spreading, recurved at the margin, many in clusters, often

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somewhat cottony underneath; headlets of flowers small, on abbreviated branchlets terminal; floral ray usually white; corolla of central flowers pale; fruits generally beset with hairlets. **A. ramulosus.**

1364. Leaves soon spreading.

An alpine shrub, finally tall; branchlets very slender, their vestiture appressed; leaves minute, from narrow-elliptical to almost ovate, recurved at the margin, many in clusters; headlets of flowers very small, singly terminal, but crowded into almost leafy paniculate spikes; involucral bracts comparatively few; floral ray white; fruits generally somewhat beset with hairlets.
A. florulentus.

Leaves permanently appressed.

A shrub, finally rather tall; vestiture of branchlets somewhat cottony; leaves very minute, from elliptical to almost orbicular, recurved at the margin, many in clusters; headlets of flowers singly terminal on the ultimate branchlets; floral ray usually white; fruits generally beset with hairlets. **A. lepidophyllus.**

1365. Corollas of central flowers violet 1366

Corollas of central flowers yellowish or seldom whitish 1367

1366. Leaves beset with starry vestiture underneath.

Finally tall; leaves from broad-linear to narrow-elliptical, blunt, wavy and recurved at the margin, often faintly lobed; headlets of flowers rather small, singly terminal, conspicuously stalked; involucral bracts almost in two rows, of nearly equal length; floral ray bluish; fruits often invested with shining hairlets.
A. asterotrichus.

Leaves beset with silk-like vestiture underneath.

Finally tall; vestiture of branchlets appressed; leaves quite small but firm, from elliptic- to spatular-cuneate, recurved at the margin, entire or at the upper end indented; headlets of flowers rather small, singly terminating branchlets, but often forming leafy corymbs; involucral bracts in few rows, bluish at the margin; floral ray bluish; fruits nvested with shining appressed hairlets.
A. iodochrous.

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1367. Finally tall-arborescent.

A sylvan tree of musky scent; leaves large, rather firm, mostly ovate-lanceolar, denticulated, underneath beset with silk-like vestiture; headlets of flowers small, amply paniculated; flowers comparatively few within each involucre; floral ray white, rather short; fruits scantily beset with hairlets. "Musk-tree." **A. argophyllus.**

Shrubby or rarely somewhat arborescent 1368

1368. Quite glabrous 1369

Variously invested with hairlets 1374

1369. Leaves decurrent on the branchlets.

A desert-shrub, hardly tall, always sticky; leaves rather small and distant, mostly from elliptic- to cuneate-linear, entire or oftener imperfectly indented; headlets of flowers small; floral ray white; fruits beset with silk-like vestiture. **A. decurrens.**

Leaves simply sessile 1370

1370. Leaves linear-cylindrical.

A swamp-shrub, rather tall and slender, prominently glandular-dotted; leaves somewhat elongated, acute, closely revolute at the margin; headlets of flowers very small, corymbously paniculated; floral ray white; fruits beset with silk-like hairlets. **A. glandulosus.**

Leaves nearly or quite flat 1371

1371. Headlets of flowers corymbously terminal.

A coast-shrub, finally rather tall, somewhat sticky; leaves linear, rather long, hardly pointed, almost flat or somewhat revolute at the margin; headlets of flowers small, corymbously terminal; floral ray white; fruits scantily beset with hairlets. **A. glutescens.**

Headlets of flowers singly terminal 1372

1372. Headlets of flowers rather small.

A desert-shrub, scarcely tall, always sticky; leaves small, from obovate- to cuneate-spatular, flat, generally somewhat denticulated; headlets of flowers almost sessile, terminating branchlets; floral ray white or slightly purplish; fruits beset with silk-like vestiture. **A. Muelleri.**

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Headlets of flowers rather large 1373

1373. Fruits beset with silk-like vestiture.

A desert-shrub, scarcely tall, always sticky; leaves quite small, mostly ovate-cuneate, indented; headlets of flowers terminating branchlets; floral ray white.

A. calcareus.

Fruits glabrous.

A desert-shrub, seldom tall, always sticky; leaves small, from elliptic- to linear-cuneate, flat, somewhat brittle, often indented at the upper end; headlets of flowers terminating branchlets; floral ray very conspicuous, white; fruits rather long. **A. magniflorus.**

1374. Floral ray bluish or purplish 1375

Floral ray white 1378

1375. Leaves as well as headlets of flowers relatively large.

A desert-shrub, rather tall, rough from rigid jointed hairlets; leaves comparatively thin, from obovate- to lanceolar-elliptical, denticulated, sessile or even clasping; headlets of flowers broad, conspicuously stalked, often somewhat corymbously arranged; involucral bracts in two rows of almost equal length, acute; expansions of marginal flowers rather narrow; fruits nearly glabrous.

(Erigeron rudis.) **A. exul.**

Leaves as well as headlets of flowers relatively small 1376

1376. Leaves appressed. ... ...

Shrub, seldom tall, sticky, hardly spreading; leaves minute, crowded, linear-cylindrical, blunt; headlets of flowers quite small, terminating leafy branchlets; involucre remaining much contracted; fruits glabrous, black; pappus short. **A. teretifolius.**

Leaves spreading 1377

1377. Quite shrubby.

Rather tall, much beset with simple glandule-bearing hairlets; leaves rather long and flaccid, linear, acute, at the margin revolute; headlets of flowers solitary or two or few near together, rather broad; fruits beset with silk-like vestiture. **A. adenophorus.**

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Semiherbaceous.

Dwarf, somewhat beset with rigid hairlets; leaves linear, sessile, pointed, at the margin revolute; headlets of flowers rather small, singly terminal on long and slender stalks, the latter often slightly cottony towards the summit; fruits somewhat or hardly beset with hairlets.
A. Huegelii.

1378. Headlets of flowers usually solitary 1379

Headlets of flowers racemose or corymbose 1380

1379. Leaves always large.

Shrub, rather tall, much beset with a velvet-like whitish or somewhat brownish vestiture; leaves from cordate- to elliptic-ovate, entire, but slightly wavy at the margin, nearly glabrous and much wrinkled above; headlets of flowers very large, on long stalks; floral ray much elongated, white or somewhat purplish; fruits beset with shining appressed hairlets; bristlets of pappus copious. Figure 81. **A. pannosus.**

Leaves small.

A desert-shrub, finally rather tall, much beset with a close grey vestiture; leaves mostly from elliptic- to ovate-cuneate, recurved at the margin; headlets of flowers short-stalked; floral ray white; fruits densely beset with hairlets. **A. pimeleoides.**

1380. Leaves broad 1381

Leaves very narrow 1382

1381. Vestiture silk-like.

Shrub, from somewhat dwarf to rather tall, much beset with a silver-shining appressed sometimes reddish vestiture; leaves firm, musky scented, from obovate- to lanceolar-elliptical, often denticulated or occasionally deeply indented, above glabrous and reticular-venulated; headlets of flowers somewhat corymbously arranged or only three or two together, seldom solitary; involucre narrow; few or even only two of the corollas flatly expanding, their lamina white; fruits soon glabrous.
A. myrsinoides.

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Vestiture velvet-like.

Shrub, rather tall; leaves from elliptical to cordate-ovate, imperfectly indented, scantily beset with hairlets above; headlets of flowers rather large, conspicuously stalked, few or two together or solitary; floral ray usually white; fruits beset with hairlets. **A. dentatus.**

1382. **Headlets of flowers arranged in corymbs.**

From rather dwarf to finally very tall, often riparian; leaves from quite small to comparatively large, mostly lanceolar, occasionally verging into a narrow elliptic or ovate form, distantly indented or denticulated, usually much wrinkled above, closely beset with stellular hairlets beneath; headlets of flowers rather small, conspicuously stalked, often forming corymbs; floral ray white; fruits beset with hairlets. **A. stellulatus.**

Headlets of flowers arranged in spike-like racemes.

Desert-shrub, rather tall and slender; leaves small, linear, revolute at the margin, beset with hairlets underneath; headlets of flowers copious, slender; involucre hemi-ellipsoid, somewhat yellowish outside; floral ray white; fruits beset with appressed shining hairlets. **A. Mitchelli.**

BRACHYCOME.

1383. **Corollas of marginal flowers with exceedingly minute expansions.**

An annual dwarf desert-plant; leaves pinnatifid, the lobes acute; headlets of flowers small; fruit obovate, flat, the surrounding membrane cleft into hooked lobes; pappus absent. **B. collina.**

Corollas of marginal flowers with long flat expansions, forming a ray 1384

1384. **Expansions of marginal corollas yellow.**

Perennial desert-plant, beset with short glandule-bearing hairlets; leaves mostly at the lower portion of the stem only, elliptic-cuneate, notched at the upper end; fruit brownish, compressed, surrounded by a fringed membrane; pappus conspicuous. **B. chrysoglossa.**

Expansions of marginal corollas white or bluish ... 1385

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1385. Perennial 1386

Annual 1402

1386. Fruits black 1387

Fruits brownish 1388

1387. Leaves indented towards the summit, beset with minute glandule-bearing hairlets.

Rather dwarf desert-plant; leaves mostly elliptic-cuneate, short-lobed towards the upper end; fruit obovate, somewhat compressed, granular-rough, without any marginal membrane; pappus stellular. **B. melanocarpa.**

Leaves dissected into narrow segments, glabrous.

Much branched, generally glabrous; leaves pinnatisected, the segments often again divided; headlets of flowers small, on very slender stalks; fruits narrow-ellipsoid, slightly compressed, rough, without any membranous margin; pappus stellular. **B. multifida.**

1388. Pappus absent.

Nearly glabrous, producing offshoots from the root, branchless or hardly branched; leaves linear or the lower lanceolar-linear, never numerous on the stem; headlets of flowers small, on long stalks; fruits obovate, compressed, with a thick margin, but without any membrane. **B. graminea.**

Pappus present 1389

1389. Stems reduced to leafless flowerstalks 1390

Stems bearing leaves 1391

1390. Leaves doubly pinnatisected.

Alpine, glabrous; leaves all radical, slender-stalked, the segments very narrow, entire or oftener subdivided; fruits much compressed, only the outer broad-membranously margined. **B. nivalis.**

Leaves only denticulated.

Dwarf, nearly glabrous; leaves all radical, crowded, from obovate- to elliptical-cuneate, generally denticulated towards the summit; headlets of flowers short- and strong-stalked, rather large; involucral bracts purplish-dark at the edge; fruits flat, without any membranous margin; pappus stellular. "Native Daisy." **B. decipiens.**

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1391. **Fruits all or some with a conspicuous marginal membrane** 1392

Fruits all without a marginal membrane 1397

1392. **Leaves pinnatisected.**

Finally slightly shrubby; branches thin; segments of leaves narrow, usually entire and acute; headlets of flowers quite small; fruits compressed, mostly granular-rough, their membranous margin often fringed or ciliolated, but the outer fruit without any marginal membrane; pappus minute. **B. ciliaris.**

Leaves short-lobed or indented or entire 1393

1393. **Partly beset with hairlets** 1394

Nearly or quite glabrous 1396

1394. **Root producing offshoots.**

Beset with scattered much appressed hairlets; radical leaves long-stalked, acutely lobed; stem-leaves few, elliptic-lanceolar, somewhat indented or entire; headlets of flowers comparatively large, on long stalks; fruits granular-rough, broad-margined. **B. heterodonta.**

Roots without any offshoots 1395

1395. **Pappus minute.**

Much beset with short jointed and often glandule-bearing hairlets, seldom almost glabrous; lower leaves from obovate- to elliptic-cuneate, bluntly lobed; upper leaves narrower and less indented; headlets of flowers comparatively large; involucral bracts very blunt; fruits flat, somewhat granular-rough, broadly margined; pappus minute. **B. stricta.**

Pappus conspicuous.

A rather robust desert-herb, imperfectly beset with cottony vestiture; stems several, mostly branchless; leaves from linear- to lanceolar-cuneate, often acutely short-lobed towards the summit, the upper leaves sessile; headlets of flowers comparatively large, long-stalked; fruits compressed, granular- or aculeolar-rough, their membranous margin fringed with upward dilated lobules; pappus conspicuous. **B. calocarpa.**

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1396. Leaves from obovate- to elliptic-cuneate.

Often rather tall; leaves mostly radical, bluntly short-lobed or merely indented at the upper end, the stem-leaves distant, sessile and narrower; headlets of flowers rather large; involucral bracts comparatively narrow, acute; fruits flat, their membranous margin usually entire; pappus-bristlets very short, but somewhat dilated downward. **B. scapiformis.**

Leaves linear.

Relatively tall; leaves nearly all radical, tufted, much elongated, entire; headlets of flowers comparatively large; fruits flat, their membranous margin usually entire; pappus very conspicuous. **B. cardiocarpa.**

1397. Roots producing offshoots 1398

Roots without any offshoots 1399

1398. Pappus conspicuous.

Quite glabrous; stems slender, branchless; leaves nearly all radical, linear, entire or rarely few-lobed; headlets of flowers rather large; involucral bracts broadish, blunt; fruits obovate, hardly compressed, few-streaked, thick-margined; pappus stellular. **B. radicans.**

Pappus very minute.

Creeping, somewhat beset with short glandule-bearing hairlets; leaves from linear- to narrow-lanceolar, entire, the carinular venule prominent; headlets of flowers rather small; involucral bracts acute; fruits almost elliptical, distinctly compressed, granular-rough, thick-margined. **B. angustifolia.**

1399. Leaves all lobed or indented.

A rather tall and robust herb, generally beset with jointed hairlets; lower leaves from obovate to elliptical, mostly pinnatifid and with broadish incised or indented or entire lobes; upper leaves less divided and somewhat clasping with a dilated base; headlets of flowers large; fruits oblique-ellipsoid, hardly compressed, somewhat angular; pappus conspicuous. **B. diversifolia.**

Leaves all or mostly entire 1400

1400. Fruits smooth.

Glabrous; leaves nearly all radical, from linear- to elliptic-lanceolar, long-stalked, entire; headlets of flowers rather small; fruits compressed, blunt-edged; pappus minute. **B. scapigera.**

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Fruits rough 1401

1401. Lower leaves broadish, all entire.

Rather tall, glabrous; branches hardly spreading; leaves greyish-green, the lower from obovate- to elliptic-lanceolar, the upper narrower; headlets of flowers relatively small, slender-stalked; fruits finally turgid; pappus very minute.
B. basaltica.

All leaves narrow or the lower lobed-dilated.

Somewhat glandular-rough; branches rather spreading, slender; leaves linear, nearly or quite entire, seldom pinnatilobed, the upper short and distant; headlets of flowers relatively small; fruits almost clavate, granular-rough, bluntly margined; pappus minute.
B. trachycarpa.

1402. Fruits with a turgidly or membranously enlarged margin 1403

Fruits without any enlarged margin 1405

1403. Fruits very turgid at the margin.

Dwarf; leaves all radical, mostly pinnatifid, their segments narrow; headlets of flowers small, on long slender stalks; involucral bracts broadish, blunt; floral ray quite short; fruits brownish, slightly compressed, cottony-ciliolated and on both sides lined by a narrow longitudinal ridglet; pappus conspicuous, stellular. **B. pachyptera.**

Fruits membranous at the margin 1404

1404. Fruits longitudinally streaked on both sides by three rough lines.

Dwarf, often glabrous; leaves pinnatifid, with narrow and acute lobes; headlets of flowers small, on long thin stalks; involucral bracts rather broad, blunt; receptacle almost conical; fruits small, brownish, much compressed, ciliolated; pappus minute. **B. ptychocarpa.**

Fruits without longitudinal streaks.

Dwarf, often somewhat beset with hairlets; leaves pinnatifid or some trifid, the lobes narrow and acute; headlets of flowers small, on very thin and proportionately long stalks; involucral bracts comparatively narrow; fruit obovate, flat, brownish, ciliolated; pappus stellular, conspicuous. **B. debilis.**

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1405. Leaves deeply cleft into narrow lobes.

Dwarf, often somewhat beset with minute jointed glandule-bearing hairlets; leaves acutely lobed or some lobeless; headlets of flowers small, on very thin and proportionately long stalks; involucral bracts comparatively few, blunt; fruits quite small, brownish, narrow, quadrangular, somewhat compressed; pappus stellular. **B. exilis.**

Leaves shortly cleft into broadish lobes.

Dwarf, often beset with jointed hairlets; lower leaves pinnatifid, upper indented or some of them entire; headlets of flowers rather small; floral ray quite short; fruits angular, granular-rough, the marginal fruits ciliolated; pappus stellular. **B. goniocarpa.**

LAGENOPHORA.

1406. Root producing elongated offshoots.

Rather dwarf; stems unbranched, slender; leaves nearly all basal, from obovate- to cuneate-elliptical, somewhat indented or distantly denticulated, usually beset with short hairlets; the stem-leaves mostly rudimentary and bract-like; headlets of flowers quite small, singly terminal; involucral bracts mostly narrow, in few rows; expansion of marginal corollas generally bluish; perfect fruits compressed, narrowed into a very short stalklet. **L. Billardieri.**

Root without any conspicuous offshoots.

Somewhat tall; leaves mostly basal, from lanceolar- to obovate-elliptical, much indented, beset with jointed hairlets; stem-leaves quite small, entire; headlets of flowers singly terminal; involucral bracts rather broad, in several rows; expansion of marginal corollas generally bluish; perfect fruits compressed, oblique-obovate, their basal attenuation very short. **L. Huegelii.**

SOLENOGYNE.

1407. Stems robust, about as long as the leaves or shorter.

Dwarf, often densely beset with minute hairlets; stems leafless, upwards slightly turgid; leaves radiate-spreading, elliptic-cuneate; headlets of flowers quite small; involucral bracts broadish, blunt; marginal flowers very small; fruits considerably compressed. Figure 78.

(Lagenophora Emphysopus.) **S. Emphysopus.**

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ABROTANELLA.

1408. Leaves rigid, linear.

Depressed into ramified patches, glabrous; leaves shining, spreading, at the base clasping; headlets of flowers very small, singly terminal, sessile or short-stalked; involucral bracts streaked by three transparent venules; fruit bluntly angular. Figure 89. **A. nivigena.**

COTULA.

1409. Annual.

Erect, slender, almost glabrous; leaves threadlike-linear; headlets of flowers on elongated stalks; involucral bracts few, very broad; marginal flowers in one row, without corolla and stamens, their fruits on distinct stalklets and each surrounded by a thin membrane; fruits of the central flowers flat, smooth, without any membranous margin. **C. filifolia.**

Perennial 1410

1410. Leaves indented or some entire.

Diffuse or partly prostrate and creeping, glabrous; leaves from elliptic- to linear-lanceolar, occasionally rather long-lobed, generally dilated towards the clasping base; headlets of flowers comparatively large, on elongated stalks; marginal flowers in one row, without any corolla and stamens, on conspicuous stalklets, and each surrounded by a thin membrane; fruits of the central flowers turgidly margined. **C. coronopifolia.**

Leaves pinnatisected 1411

1411. Marginal flowers without any corolla 1412

Marginal flowers with a minute corolla 1413

1412. Headlets of flowers on elongated thread-like stalks.

Diffuse, lax, much beset with soft hairlets; leaves flaccid, short-stalked, their segments mostly cleft into narrow lobes; headlets of flowers very small; marginal flowers in several rows, each on a distinct stalklet, surrounded by a narrow membrane; fruits of the central flowers without any expanding margin. **C. Australis.**

Headlets of flowers on short, rather thick stalks.

An alpine dwarf glabrous plant, somewhat creeping; leaves short-stalked, their segments rather narrow, entire or slightly incised; marginal flowers in several rows, each on a minute stalklet, their fruits thickly margined and often somewhat ciliolated. **C. alpina.**

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1413. Involucral bracts few, nearly orbicular.

Chiefly a coast-plant, creeping, dwarf, nearly glabrous; leaves somewhat succulent, long-stalked, their segments rather broad, incised; receptacle conical; flower-stalks with leaf-stalks from nodes of the creeping stems, much elongated; marginal flowers in several rows, their fruits bluntly margined. **C. reptans.**

Involucral bracts several, nearly oval.

An alpine dwarf plant, much beset with soft hairlets; leaf-segments rather broadish, often somewhat indented; headlets of flowers on short and robust stalks; receptacle conical; marginal flowers in several rows, their fruits unprovided with stalklets, thickly margined. **C. Filicula.**

CENTIPEDA.

1414. Mostly prostrate.

Perennial odorous herb, rather weak; leaves mostly elliptic-cuneate, towards the base narrow and entire; headlets of flowers somewhat stalked, almost hemispherical; involucral bracts hardly membranous at the margin; flowers emersed; outer flowers in several rows, their corolla minute; fruits upwards ellipsoid, streaked to the summit. "Sneeze-weed." **C. orbicularis.**

Mostly erect 1415

1415. Headlets of flowers almost hemispherical.

Perennial odorous herb, rather robust; leaves also towards the dilated base denticulated, often somewhat crisped; headlets of flowers relatively large, sessile; involucral bracts membranous at the margin; flowers emersed; outer flowers in numerous rows, their corolla minute; fruits upwards cylindrical and there streakless. Figure 88. **C. Cunninghami.**

Headlets of flowers almost semiovate.

Perennial desert-herb; leaves denticulated also towards the dilated base; headlets of flowers relatively large, sessile; involucral bracts membranous at the margin; flowers enclosed; outer flowers in few rows; corolla of all flowers turgid towards the base; fruits upwards cylindrical and there streaked. **C. thespidioides.**

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EPALTES.

1416. Leaves mostly from obovate- to spatular-cuneate.

Depressed or ascending perennial herb; leaves conspicuously stalked; headlets of flowers almost sessile or on very short stalks, broader than long; involucral bracts from ovate to orbicular, bending considerably inward; flowers enclosed; non-staminate flowers numerous; fruits slender, glabrous, subtle-streaked. **E. Australis.**

ELACHANTHUS.

1417. Scalelets of pappus subtly pennular-streaked.

Leaves quite short, linear-semicylindrical; involucral bracts from ovate-lanceolar to elliptical; flowers within each involucre rather few; corolla of the non-staminate flowers gradually attenuated upwards into its minute lobeless summit; pappus-scalelets from few to several, very minutely denticulated, or those of the central flowers more evidently serrulated; fertile fruits almost obovate, beset with a silk-like vestiture. **E. pusillus.**

ETHULIOPSIS.

1418. Somewhat dichotomously branched.

Erect; leaves sessile, the upper gradually much reduced in size; denticulation irregular, sometimes lobular and crisped; involucral bracts in few rows of unequal length, broadish and slightly yellowish; corollas pale; pappus of the staminate flowers formed of only few somewhat flattened and ciliolated bristlets; fertile fruits clavate- and oblique-ellipsoid, glabrous, with a narrow decurrently prominent line along the inner side. Figure 82.

(Epaltes Cunninghami.) **E. Cunninghami.**

PODOSPERMA.

1419. Involucre elongated, comparatively narrow.

Erect or ascending, never tall, branchless or scantily branched; leaves nearly or quite linear, somewhat distant, relatively long, but the floral leaves abbreviated; involucre at first almost cylindrical, at last broadly obconical; involucral bracts narrow, acute; corollas long, very slender to near the summit, hardly exserted; bristlets of pappus few; fruits beset with hairlets.

(Podotheca angustifolia.) **P. angustifolium.**

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IXIOLAENA.

1420. Leaves much narrowed at the base.

Scantily beset with cottony vestiture; leaves from linear- to elliptic-lanceolar, often recurved at the margin; headlets of flowers on elongated distantly bracteate stalks, broader than long; involucral bracts generally beset with minute glandule-bearing hairlets, the inner ending in a minute scarious lamina; flowers somewhat exserted; bristlets of the pappus usually several, shorter than the corolla, slightly ciliolated; fruits almost glabrous.

I. leptolepis.

Leaves conspicuously clasping at the base.

Much beset with cottony vestiture; leaves mostly from narrow- to broad-lanceolar, pointed, revolute at the margin; headlets of flowers on rather short stalks, longer than broad; flowers hardly exserted; pappus-bristlets usually many, about as long as the corollas, very slightly ciliolated; fruits almost glabrous. **I. tomentosa.**

PODOLEPIS.

1421. Headlets of flowers almost hemiellipsoid-cylindrical.

Erect desert-plant; leaves elongated, from broad- to narrow-lanceolar, recurved along the margin, the upper sessile and clasping at the base; headlets of flowers usually few or several together at the summit of branchlets; involucral bracts yellowish, wrinkled, all sessile, pointed; marginal flowers similar to all others and hardly longer; fruits somewhat papillular-rough.

P. rutidochlamys.

Headlets of flowers almost hemispherical **1422**

1422. Headlets of flowers relatively large **1423**

Headlets of flowers relatively small **1426**

1423. Involucral bracts much wrinkled.

Perennial coast- or desert-plant, often somewhat beset with cottony vestiture, hardly or scantily branched; leaves from elliptic- to linear-lanceolar or the upper quite linear; headlets of flowers quite large, solitary, on elongated

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transparently bracteate stalks; involucral bracts yellowish or brownish, mostly blunt, stalk-like at their base; marginal flowers much longer than all the others, their corollar expansion flat, at the summit incised; fruits somewhat papillular-rough. **P. rugata.**

Involucral bracts nearly smooth 1424

1424. Annual.

Desert plant, never tall, somewhat beset with cottony vestiture; leaves lanceolar or the upper gradually linear, recurved along the margin; headlets of flowers rather large, singly terminal on thin transparently bracteate stalks; involucral bracts yellowish, much pointed, the inner with stalk-like base; marginal flowers somewhat longer than the rest, their corollar expansion flat, incised at the summit. **P. canescens.**

Perennial 1425

1425. Stalk-like base of the inner involucral bracts quite enclosed.

Often rather tall and soon nearly glabrous; lower leaves from elliptic- to elongate-lanceolar, the upper gradually narrower and clasping; headlets of flowers quite large, singly terminal on conspicuous rather robust bracteate stalks; involucral bracts yellowish, mostly acute, their stalk-like base concealed; marginal flowers much longer than the rest, their corollar expansion either flat or somewhat tubular, conspicuously lobed; fruit papillular-rough. **P. acuminata.**

Stalk-like base of the inner involucral bracts partly exserted.

Often rather tall and soon nearly glabrous; lower leaves from elliptic- to elongate-lanceolar, the upper narrower and clasping, recurved along the margin; headlets of flowers solitary or oftener two or few together at and towards the summit of the stem or branches; involucral bracts lax, yellowish, even the outermost often stalk-like somewhat narrowed; marginal flowers much longer than the rest, their corollar expansion flat, conspicuously lobed; fruits papillular-rough. **P. longipedata.**

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1426. Marginal flowers about as long as any of the others.

Annual desert-plant, seldom tall; branches thin; stem-leaves rather small, from ovate- to elliptic-lanceolar, sessile, clasping, particularly underneath beset with somewhat cottony vestiture; headlets of flowers solitary, on long thread-like often dark-purplish bractless stalks; involucral bracts closely appressed, yellowish, quite smooth, very shining; pappus of the marginal flowers usually absent, of the others reduced to eight or less bristlets. **P. Lessoni.**

Marginal flowers longer than any of the others.

Annual desert-plant, almost glabrous; branches very thin, usually numerous; leaves filiform-linear, quite short; headlets of flowers on long thread-like bractless stalks; involucral bracts blunt, pale-yellowish, quite smooth, very shining; marginal flowers with whitish corollar expansion and without any pappus; fruits glabrous.
P. Siemssenia.

CASSINIA.

1427. Herbaceous.

Tall, robust, much beset with interwoven hairlets; leaves large, from ovate- to elongate-lanceolar, mostly clasping and somewhat decurrent; headlets of flowers broadish, in an ample lax panicle; involucral bracts pale-brownish or pale-yellow, shining, transparent; fruits streaked.
C. spectabilis.

Shrubby 1428

1428. Involucral bracts pale-yellowish 1429

Involucral bracts white 1430

1429. Much beset with a close vestiture.

A desert-shrub; leaves crowded, cylindric-linear, quite short, often recurved-pointed; headlets of flowers in rather elongated somewhat pyramidal panicles; involucral bracts transparent, shining; flowers four or less within each involucre. Figure 84. **C. arcuata.**

Almost glabrous.

Leaves rather long, cylindric-linear, smooth; headlets of flowers in somewhat abbreviated panicles; involucral bracts shining; flowers few within each involucre.
C. quinquefaria.

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1430. Leaves cylindric-linear.

Much beset with very short but usually rigid and spreading hairlets; leaves from rather short to comparatively long, crowded, mostly rough above; headlets of flowers narrow, in corymbously contracted panicles; involucral bracts without lustre outside; flowers from few to several within each involucre, **C. aculeata.**

Leaves from narrow- to elongate-lanceolar.

Imperfectly beset with a short vestiture; leaves always comparatively long, glabrous and smooth above, flat or somewhat recurved at the margin; headlets of flowers narrow, in corymbously contracted panicles; involucral bracts without lustre outside; flowers few or several within each involucre. **C. longifolia.**

IXODIA.

1431. Involucres from the base to the petaloid ray green, viscid-shining.

Shrub, finally rather tall, glabrous; leaves from broad-linear to narrowly elongate-lanceolar, sessile; headlets of flowers corymbously crowded; involucral bracts appressed; corollas whitish or somewhat purplish; fruits papillular-rough. **I. achilloides.**

AMMOBIUM.

1432. Involucral bracts nearly all upwards white and most of them soon spreading.

Erect, rather tall herb; branches lined with leafy expansions; lower leaves lanceolar, flat, much decurrent on their elongated stalk; upper leaves gradually smaller, distant, sessile; headlets of flowers comparatively large; fruits angular. **A. alatum.**

ATHRIXIA.

1433. Corollas of marginal flowers without any ligular expansions.

Annual, dwarf, somewhat beset with interwoven hairlets; upper leaves linear, revolute along the margin; lower leaves broader and flattened; headlets of flowers small, on elongated rigid thread-like dark-colored stalks; involucral bracts ciliolated; marginal non-staminate flowers few; bristlets of pappus very few, plumously expanded towards the summit. **A. tenella.**

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HELIPTERUM.

1434. Perennial 1435

Annual 1437

1435. **Glabrous except the fruits.**

Never tall; stems mostly unbranched, leafy to near the summit; leaves numerous, short, linear, minutely impressed-dotted, the uppermost passing into bracts; headlets of flowers singly terminal, almost hemispherical; outer involucral bracts broad, brownish, mostly blunt; inner bracts forming a white ray; receptacle somewhat conical; fruits beset with silk-like vestiture.

H. anthemoides.

Partially or almost entirely beset with interwoven hairlets 1436

1436. **Fruits beset with silk-like vestiture.**

Never tall, often branched; leaves from narrow-lanceolar to linear, soon nearly glabrous, often somewhat incurved at the margin, the uppermost passing into bracts; headlets of flowers almost hemispherical; involucral bracts all shining and white or the outer pale-yellowish, very pointed, the inner forming rays; receptacle somewhat conical; bristlets of pappus rather few.

H. floribundum.

Fruits glabrous.

Never tall; stems almost or quite branchless; leaves flaccid, from elliptic-lanceolar to narrow-linear, permanently and densely beset with short hairlets, the lower elongated, often recurved at the margin; headlets of flowers singly terminal, comparatively large, almost hemispherical, hygroscopic; outer involucral bracts whitish or yellow or sometimes purplish or brownish, the inner forming white or yellow or outside partly reddish rays; fruits pale, slightly papular-rough, somewhat attenuated at the summit; pappus short-plumous, upwards yellowish.

H. incanum.

1437. **Glabrous, except portions of the involucral bracts and the fruits** 1438

Beset with interwoven hairlets 1439

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1438. Involucre almost hemispherical.

Never tall; leaves from elliptic- to cuneate-linear, the lower often opposite; headlets of flowers singly terminal; involucral bracts in few rows, the outer broad, blunt and often somewhat brownish, the inner forming a yellow or white ray; fruits beset with silky vestiture.
H. polygalifolium.

Involucre almost hemiellipsoid.

Seldom tall; leaves from elliptic- to linear-lanceolar, greyish-green; headlets of flowers singly terminal on the stem or on stalk-like branches; involucral bracts in few rows, the outer brownish, the inner forming a small white or yellow ray; flowers comparatively few within each involucre; fruits beset with silky vestiture, those of the central flowers imperfect. **H. strictum.**

1439. Inner involucral bracts forming a conspicuous ray ... 1440

Inner involucral bracts forming a minute ray or unexpanding 1443

1440. Headlets of flowers singly terminal 1441

Headlets of flowers crowded 1442

1441. Fruits turgid.

Never tall, somewhat beset with cottony hairlets; leaves from cylindric- to narrow-linear, rather short; headlets of flowers almost hemispherical; outer involucral bracts broadish, inner forming a white or yellow ray; fruits wrinkled-rough, glabrous, those of some of the central flowers imperfect; pappus upwards yellowish.
H. Cotula.

Fruits flat.

Always dwarf, nearly glabrous or beset with cottony hairlets; leaves from filiform- to narrow-linear; headlets of flowers turbinate-hemispherical, on scariously bracteate stalks; outer involucral bracts yellow or oftener brownish, inner forming a yellow ray; fruits glabrous; pappus yellow towards the summit. **H. hyalospermum.**

1442. Headlets of flowers rather large.

Never tall, closely beset with interwoven hairlets; leaves flaccid, from linear- to lanceolar-elliptical; headlets of flowers almost semiovate, exceptionally solitary; receptacle elevated; outer involucral bracts blunt,

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brownish-yellow, transparent, inner forming a white ray; fruits beset with silk-like vestiture, those of some of the central flowers imperfect.

H. corymbiflorum.

Headlets of flowers quite small.

Quite dwarf, slightly beset with cottony hairlets; leaves from filiform- to narrow-linear, the lower often opposite, the upper reaching the inflorescence; headlets of flowers almost cylindrical; outer involucral bracts brownish, shining, transparent, inner forming a minute white ray; flowers few within each involucre; fruits beset with silk-like vestiture, those of the central flowers imperfect.

H. pygmaeum.

1443. Involucral bracts rigid.

Quite dwarf, somewhat beset with mostly scattered hairlets; leaves from linear- to narrow-lanceolar, flat; headlets of flowers scattered, sessile, semiovate, axillary and terminal; outer involucral bracts pale, shining, acute, conspicuously ciliolated, inner semicoherent, particularly rigid; receptacle elevated; fruits slightly rough; pappus of the marginal flowers absent, of the others consisting of one to four flattish ciliolated bristlets.

H. dimorpholepis.

Involucral bracts tender-membranous 1444

1444. Flowers from two to five within each involucre.

Never tall, closely beset with somewhat cottony vestiture; lower leaves from ovate- to spatular-cuneate, upper from elliptic- to narrow-lanceolar and clasping; headlets of flowers quite small, hemiellipsoid-cylindrical, densely crowded at the summit of branches; involucral bracts from brownish- to pale-yellowish, transparent, none expanding; fruits almost glabrous, but quite concealed within intricate hairlets from the nearest bracts; bristlets of pappus capillary, extremely delicate.

H. moschatum.

Flowers many within each involucre.

Very minute, somewhat branched, slightly beset with hairlets; leaves from filiform- to narrow-linear; headlets of flowers almost semiovate, sessile; involucral bracts from reddish-brown or greenish to yellowish, shining, transparent, none expanding; fruits glabrous.

H. exiguum.

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HELICHRYSUM.

1445. **Quite or almost herbaceous** 1446

Quite shrubby 1458

1446. **Involucral bracts forming a ray** 1447

Involucral bracts forming no ray 1456

1447. **Involucral ray usually yellow or somewhat brownish** 1448

Involucral ray white or somewhat reddish 1450

1448. **Involucral bracts smooth.**

Usually rather tall and robust, glabrous or scantily beset with hairlets, though often minutely rough; stem branchless or sparingly branched; leaves long, from elliptic-lanceolar to linear or the lower occasionally cuneate-obovate, mostly recurved along the margin; flower-headlets large, terminal, solitary or two or few near together, almost hemispherical, often supported by one or more floral leaves; involucral bracts broad, rigid, shining, yellow or outside reddish-brown, rarely whitish, the majority soon spreading, the form of the lower gradually passing into that of the upper; fruits glabrous. Principal "Everlasting." **H. lucidum.**

Involucral bracts wrinkled or crisped 1449

1449. **Involucral bracts comparatively large.**

Somewhat tall, partly beset with cottony hairlets; stems often branchless; lower leaves from spatular- to narrow-lanceolar, the upper gradually broad-linear and shortened, the ultimate bract-like; headlets of flowers almost hemispherical, singly terminal; involucral bracts lax, yellow or the outer reddish-brownish, very exceptionally white, the inner forming rather suddenly a short ray; some of the marginal flowers without stamens; fruits glabrous.

H. scorpioides.

Involucral bracts comparatively small.

Never tall, partly beset with somewhat cottony hairlets; stems often branched and not rarely depressed; leaves from elliptic-lanceolar to gradually broad-linear, frequently recurved at the margin; headlets of flowers relatively small, almost hemispherical, singly terminal; involucral bracts lax, tender-membranous, yellow or the outer red-brownish, the inner forming a very short ray; some of the marginal flowers pistillate only, with a rudimentary or without any pappus; fruits glabrous.

H. rutidolepis.

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1450. Pappus-bristlets plumously dilated at the summit.

Much beset with an appressed somewhat cottony vestiture; leaves short, linear-cylindrical, at last glabrous on the outer side; headlets of flowers comparatively large, nearly hemispherical, singly terminating stems or branches; involucral bracts acute, ciliolated, the outer brownish, the expansions of the inner rather narrow; some of the marginal flowers destitute of stamens and pappus; fruits smooth; pappus-bristlets few. **H. Baxteri.**

Pappus-bristlets minutely ciliolated or denticulated up to the summit **1451**

1451. Finally very tall.

Robust, occasionally remaining rather dwarf, sometimes sticky, partly beset with somewhat cottony vestiture; leaves large, mostly on clasping stalks, from ovate- to narrow-lanceolar, soon glabrous on the upper side; headlets of flowers large, almost hemispherical, singly terminating stems or corymbously approximated branchlets; involucral bracts narrow, pointed, shining, white or tinged with rosy-red; some of the marginal flowers destitute of stamens; fruits somewhat papillular-rough. **H. elatum.**

Never very tall **1452**

1452. Glandular-rough.

From dwarf to somewhat tall; leaves from lanceolar- to narrow-linear, revolute along the margin, the upper clasping at their base; headlets of flowers comparatively large, almost hemispherical; involucral bracts all white or the outer pale-brownish; fruits smooth. **H. adenophorum.**

Vestiture without any glandules **1453**

1453. Stems or branches leafless towards the summit.

Weak and dwarf; branchless or sparingly branched, much beset with a closely appressed whitish shining vestiture; leaves rather firm, mostly basal and from spatular- to elliptic-lanceolar, nearly flat, soon on the upper side glabrous, the upper leaves much reduced in size or obliterated; headlets of flowers rather large, almost hemispherical, singly terminal; outer involucral bracts brownish or reddish; some of the marginal flowers destitute of stamens; fruits somewhat papillular-rough. **H. dealbatum.**

Stems or branches leafy throughout **1454**

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1454. Leaves rather short, quite blunt.

Partly beset with an appressed whitish close shining vestiture; leaves small, rigid, broad-linear, nearly flat, on the upper side smooth; headlets of flowers rather large, almost hemispherical, singly terminating branches; outer involucral bracts brownish; expansions of the inner bracts bluntish; some of the marginal flowers destitute of stamens and pappus; fruits papillular-rough.

H. obtusifolium.

Leaves rather long, somewhat pointed 1455

1455. Headlets of flowers always singly terminating the stems or branches.

Imperfectly beset with interwoven hairlets; leaves from ovate- or spatular- to linear-elliptical, mostly sessile, on the upper side usually rough from minute rigid hairlets; headlets of flowers large, almost hemispherical, supported by floral leaves; involucral bracts white or somewhat rosy-red, shining, the shortened lower bracts gradually passing into the upper; fruits smooth.

H. leucopsidium.

Headlets of flowers usually more than one at or near the summit of the stems or branches.

Never tall, branched only at the summit, densely and extensively beset with somewhat cottony vestiture; leaves from elliptic- to linear-lanceolar, flaccid; headlets of flowers comparatively large, almost hemispherical; involucral bracts pointed, the outermost densely invested with interwoven hairlets exteriorly; the expansions of the inner bracts often tinged with rosy-red; fruits papillular-rough. **H. Blandowskianum.**

1456. Headlets of flowers singly terminal.

A desert plant, much branched, beset with glandular or somewhat cottony vestiture; leaves from elliptic- to linear-lanceolar, mostly claspingly sessile, often recurved along the margin, the upper leaves diminutive; headlets of flowers small, almost hemispherical; involucral bracts yellow, shining, ciliolated, acute; some of the marginal flowers without stamens and pappus; fruits glabrous, slightly attenuated at the summit; pappus-bristlets somewhat plumously dilated at their summit.

H. ambiguum.

Headlets of flowers few or several or many approximated 1457

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1457. Somewhat woody.

Rather tall, often but imperfectly beset with somewhat cottony vestiture, sometimes sticky; leaves mostly linear, occasionally quite short; headlets of flowers small, crowded into generally ample corymbs, almost bellshaped-semiovate; involucral bracts yellow, seldom brownish, always shining, ciliolated, acute, mostly curved outward; fruits glabrous; pappus-bristlets plumously dilated at their summit, on some the marginal flowers absent or reduced. **H. semipapposum.**

Quite herbaceous.

Rather dwarf, often extensively beset with a somewhat cottony or appressed and rather shining vestiture; leaves mostly from elliptic- to linear-lanceolar, flaccid and often flat; headlets of flowers small, few or several crowded terminally, almost bellshaped-semiovate, hardly ever solitary; involucral bracts yellow, seldom brownish, only exceptionally white or red, always shining, ciliolated, acute; fruits glabrous; pappus-bristlets few, plumously dilated at their summit, on some of the marginal flowers absent or reduced. **H. apiculatum.**

1458. Inner involucral bracts forming a short white ray ... 1459

Involucre rayless 1462

1459. Leaves minute.

An alpine shrub, much branched, somewhat sticky; leaves closely crowded, concealing the branchlets, sessile, appressed, from ovate- to cordate-orbicular, repressed at the margin, soon almost glabrous above; headlets of flowers very small, few or several closely together at the summit of most of the numerous short branchlets, sessile; outer involucral bracts pale-yellowish; flowers few within each involucre; fruits papillular-rough.

H. baccharoides.

Leaves elongated 1460

1460. Leaves revolute along the margin.

An alpine shrub, rather tall, usually much beset with a short close vestiture, not seldom sticky; leaves firm, broadish-linear, often blunt, revolute, occasionally abbreviated, usually rough on the upper side; headlets of flowers quite small, numerous, densely crowded into compound corymbs; outer involucral bracts often brownish or reddish; expansions of the inner bracts sometimes tinged with red; flowers rather few within each involucre; fruits papillular-rough.

H. rosmarinifolium.

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Leaves almost flat 1461

1461. Leaves mostly from elongate- to narrow-lanceolar.

Shrub, finally tall; leaves of rather thin consistence, flat or slightly recurved at the margin, greyish or brownish on the under side from a thin vestiture; headlets of flowers very small, slender, densely crowded into compound corymbs; outer involucral bracts pale-yellowish or brownish, almost transparent, shining; flowers few within each involucre; fruits somewhat beset with minute hairlets. **H. ferrugineum.**

Leaves mostly cuneate-elliptical.

Shrub, rather tall; leaves of rather thin consistence, often crisped at the margin, otherwise almost or quite flat, greyish or brownish on the under side from a close vestiture; headlets of flowers quite small, slender, densely crowded into corymbs; outer involucral bracts pale-yellowish or brownish, almost transparent, shining; flowers few within each involucre; fruits beset with minute hairlets. **H. cuneifolium.**

1462. Leaves mostly ovate-obcordate.

Shrub, hardly tall; leaves quite small, of firm consistence, occasionally obovate-elliptical, greyish on the under side from a thin vestiture; headlets of flowers very small, numerously and densely crowded into compound corymbs, unexpanding; involucral bracts pale-yellow, almost transparent, shining; flowers few within each involucre, one or more destitute of stamens and pappus; fruits slightly rough. **H. obcordatum.**

Leaves mostly linear or somewhat cuneate 1463

1463. Headlets of flowers almost hemiellipsoid.

A coast-shrub, robust and finally rather tall, somewhat sticky; leaves firm, simply sessile, broadish-linear, often yellowish at the base, revolute along their margin, beset on the under side with a close short vestiture; headlets of flowers small, crowded into corymbs, at last somewhat bell-shaped; involucral bracts pale-yellowish, the inner occasionally terminating in a rudimentary white lamina; flowers rather numerous within each involucre, a few of the marginal flowers without stamens; fruits papillular-rough. **H. cinereum.**

Headlets of flowers cylindric- or turgid-ovate ... 1464

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1464. Leaves strongly decurrent.

A desert-shrub; leaves very small, linear, truncate at the summit, wrinkled-rough, shining; headlets of flowers very small, crowded into corymbs, almost unexpanding, hardly turgid; involucral bracts yellowish-white; flowers several within each involucre; fruits papillular-rough.

H. decurrens.

Leaves faintly decurrent.

A desert-shrub; leaves quite small, cuneate-linear, repressed at the summit, revolute along the margin, smooth or occasionally rough on the upper side, beset with short vestiture on the lower side; headlets of flowers very small, crowded into compound corymbs, quite unexpanding, turgid; involucral bracts pale-yellowish or sometimes reddish, almost glabrous, shining; flowers rather few within each involucre, two or three of the outer without stamens and pappus; fruits papillular-rough.

H. retusum.

WAITZIA.

1465. Terminal attenuation of the fruit very thin, longer than the seed-bearing portion.

Erect, somewhat beset with short hairlets; leaves never quite short, the uppermost reaching the inflorescence; headlets of flowers almost corymbously arranged; involucral bracts broadish, very acute, shining, yellow or white or the lower red, the upper spreading or even repressed; the laminas of all similar in form and mostly in size, minutely ciliolate; fruits somewhat papillular-rough.

W. corymbosa.

LEPTORRHYNCHOS.

1466. Involucral bracts mostly blunt **1467**

Involucral bracts mostly pointed **1468**

1467. Involucral bracts tender-membranous, dull- and pale-colored.

Annual, rather robust, somewhat beset with cottony vestiture; leaves from lanceolar- to broad-linear, recurved along the margin; headlets of flowers comparatively large, from semiovate to finally hemispherical; involucral bracts almost colorless and nearly without lustre, slightly wrinkled, the outer somewhat elliptical; pappus-bristlets rather numerous; fruits terminated by a thin attenuation.

L. Waitzia.

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Involucral bracts firm, shining, bright- or brownish-yellow.

Perennial, never tall, scantily beset with somewhat cottony vestiture; leaves from broad- to narrow-linear; headlets of flowers soon hemispherical; involucral bracts somewhat spreading, mostly oval; pappus-bristlets rather numerous; fruits terminated by a short and thin attenuation. **L. nitidulus.**

1468. **Pappus-bristlets few or several** 1469

Pappus-bristlets rather numerous 1471

1469. **Marginal non-staminate flowers unprovided with any pappus.**

Perennial, rather tall, very slender; leaves all linear and along the margin revolute, the radical leaves considerably elongated, all above nearly glabrous; headlets of flowers quite small, on very long and almost capillary stalks, turbinate-semiovate; involucral bracts in many rows, quite minute, ciliolated and somewhat cottony invested; pappus-bristlets from four to six, plumously dilated at the summit; terminal attenuation of fruit very short. **L. tenuifolius.**

All flowers provided with a pappus 1470

1470. **Pappus-bristlets of staminate flowers usually from eight to twelve.**

Perennial, from somewhat dwarf to rather tall, imperfectly or scantily beset with cottony vestiture; leaves mostly from elliptic- to linear-lanceolar, usually bearing on the upper side scattered hairlets, flat or somewhat recurved at the margin; headlets of flowers small, on elongated much bracteate stalks, semiovate-bellshaped; involucral bracts in many rows, minute, ciliolated; pappus-bristlets of the non-staminate flowers from three to five; terminal attenuation of fruit very short. **L. squamatus.**

Pappus-bristlets of staminate flowers usually four.

Annual, never tall, imperfectly or scantily beset with cottony vestiture; leaves mostly from lanceolar- to narrow-linear, usually recurved along the margin, often becoming glabrous above; headlets of flowers quite small, on elongated very thin much bracteate stalks, turbinate-semiovate; involucral bracts in many rows, minute, conspicuously ciliolated, shining, pale-yellowish, transparent; pappus-bristlets of the non-staminate flowers two or three; terminal attenuation of fruit very short. **L. pulchellus.**

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1471. Fruits terminated suddenly by a long and very thin attenuation.

Annual, never tall, usually much beset with scattered and often glandule-bearing hairlets; leaves from narrow-lanceolar to broad-linear; headlets of flowers rather large, almost hemispherical, on elongated much bracteated stalks; involucral bracts in rather few rows, the outer lax, shining, whitish, glabrous; corollas bright-yellow; seed-bearing portion of the fruit turgid, nearly smooth.
L. medius.

Fruits terminated gradually by a short attenuation.

Perennial, rather tall and robust, usually much beset with scattered and often glandule-bearing hairlets; leaves comparatively long, from narrow-lanceolar to broad-linear; headlets of flowers relatively large, almost hemispherical, on much elongated and copiously bracteated stalks; involucral bracts in rather few rows, the outer lax, shining, whitish, glabrous; corollas pale-yellow or almost whitish; fruits comparatively long, glandular-rough. **L. elongatus.**

GNAPHALIUM.

1472. Annual 1473

Perennial 1474

1473. Usually somewhat tall.

Densely beset with somewhat cottony vestiture; leaves flaccid, from obovate- or elliptic-cuneate to lanceolar- or broadish-linear, the upper sessile; headlets of flowers crowded at or near the summit, generally unsupported by floral leaves; involucral bracts pale-yellowish, shining; fruits cylindric, glabrous. **G. luteo-album.**

Always quite dwarf.

Beset with somewhat cottony vestiture; leaves flaccid, from broad- to narrow-linear; clusters of flower-headlets surrounded by narrow leaves; involucral bracts yellowish or brownish, transparent; fruits almost glabrous.
G. indutum.

1474. Headlets of flowers singly terminal.

Alpine, dwarf, densely beset with lax somewhat cottony vestiture; leaves nearly all radical and from obovate- to cuneate- or spatular-elliptical; stem-leaves very few, narrow; involucral bracts pale-brownish or reddish, shining, narrow, transparent; fruits subtly beset with hairlets. **G. Traversii.**

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Headlets of flowers in mostly terminal clusters ... 1475

1475. Clusters of flower-headlets surrounded by mostly narrow floral leaves.

Partly beset with somewhat cottony often appressed vestiture, occasionally rather tall; leaves firm, the lower mostly from elliptic- to elongate-lanceolar, the upper distant and narrower, all soon glabrescent above; headlets of flowers capitular-crowded; involucral bracts brownish, shining; fruits glabrous, slightly compressed.

G. Japonicum.

Clusters of flower-headlets surrounded by mostly broad floral leaves.

Alpine, extensively beset with somewhat cottony vestiture; root emitting offshoots; radical leaves from elliptic- to lanceolar-ovate; stem-leaves mostly narrow-lanceolar; floral leaves often again broader, all flat and usually velvetlike-invested also on the upper side; some of the headlets with prevailingly fertile fruits, others with predominantly sterile fruits; involucral bracts pale-brownish, shining; fruits glabrous.

G. alpigenum.

ANTENNARIA.

1476. Headlets of flowers singly terminal, almost sessile.

Alpine, dwarf and depressed, scantily beset with somewhat cottony vestiture; leaves firm, mostly linear, acute, slightly channelled, glabrous; headlets with perfect fruits more slender than the others; pappus-bristlets equally thin throughout; fruits very slender, glabrous.

A. uniceps.

LEONTOPODIUM.

1477. Expanding in ample depressed patches.

Alpine, whitish or greyish from a thin appressed vestiture; leaves very small, crowded on stems and branches, spreading, from obovate- to cuneate-elliptical, flat, at their base clasping; flower-headlets singly terminal on crowded branchlets, small, sessile, slightly exceeding the floral leaves; ray-like expansion of involucre short, white; fruits slender, beset with very minute hairlets; bristlets of the pappus thickened at the upper extremity, particularly those of the sterile fruits. Figure 83.

L. catipes.

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STUARTINA.

1478. Headlets few-flowered, capitular-crowded.

Often quite dwarf, beset with somewhat cottony vestiture; leaves very small, flaccid, flat, occasionally verging into an elliptic form; headlets minute, their clusters surpassed by the floral leaves; involucres rather dark-colored; fruits glandular-rough. **S. Muelleri.**

RUTIDOSIS.

1479. Annual, minute.

Glabrous or scantily beset with interwoven hairlets; leaves quite short, linear, some opposite; headlets of flowers extremely small, often several terminally placed together, each supported by floral leaves; involucral bracts whitish, blunt, smooth, entire; corolla sometimes greenish; pappus-scalelets spatular- or lanceolar-ovate, often placed obliquely, without any ciliolation; fruits papillular-rough. **R. Pumilo.**

Perennial **1480**

1480. Leaves mostly radical.

Somewhat beset with interwoven hairlets; stems hardly branched; leaves mostly broad-linear, revolute along the margin, soon almost glabrous; headlets of flowers rather large, singly terminal, nearly hemispherical; involucral bracts pale-yellowish, acute, neither wrinkled nor ciliolated, the inner acute, the outer blunt; pappus-scalelets elliptic-spatular, subtle-ciliolated. **R. leiolepis.**

Leaves scattered **1481**

1481. Involucral bracts smooth.

Scantily beset with interwoven hairlets; stems hardly branched; leaves mostly broad-linear, revolute along the margin, the upper abbreviated; headlets of flowers singly terminal, nearly hemispherical; involucral bracts yellowish, somewhat foliaceous towards their base, the inner ciliolated towards the summit; pappus-scalelets narrow-lanceolar, plumously ciliolated; fruits papillular-rough. **R. leptorrhynchoides.**

Involucral bracts wrinkled.

Finally somewhat tall, closely or imperfectly beset with interwoven hairlets; stems branchless or scantily branched; stem-leaves broad-linear, revolute along the margin, the upper gradually shortened, the lowest somewhat dilated;

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headlets of flowers singly terminal, nearly hemispherical; involucral bracts lax, bright-yellow, ciliolated; pappus-scalelets spatular-elliptical, without any cilioles; fruits papillular-rough. **R. helichrysoides.**

HUMEA.

1482. Leaves very broad.

Tall, herbaceous, beset with scattered glandule-bearing hairlets, strong-scented; leaves very large, from ovate- to elongate-lanceolar, much wrinkled, stem-clasping at the base or decurrent; headlets of flowers in a very elongated largely pendent-branched and minutely bracteate panicle; involucral bracts shining-red or almost copper-colored, transparent; flowers three or four within each involucre; corollas upwards conspicuously widened and purplish; fruits glandular-rough. **H. elegans.**

Leaves very narrow or quite minute 1483

1483. Involucral bracts pale-yellowish.

Shrubby, partly beset with appressed somewhat cottony vestiture; leaves cylindric-linear, glabrescent on the outer side; headlets of flowers in a corymbously contracted panicle; flowers from three to seven within each involucre; corollas slightly widened upwards and yellowish; fruits glabrous. Figure 85. **H. ozothamnoides.**

Involucral bracts white.

Shrubby, glabrous, somewhat sticky; leaves crowded, minute, scale-like, from lanceolar- to narrow-elliptical, appressed; headlets of flowers in corymbously contracted panicles; flowers generally four or five within each involucre; corollas pale-yellowish; fruits slightly glandular-rough. **H. squamata.**

CALOCEPHALUS.

1484. Shrubby.

Coast-plant, much branched and spreading, closely beset with an appressed whitish or greyish vestiture; leaves scattered, minute, linear; clusters of flower-headlets globular, whitish; flowers two or three within each involucre; pappus-bristlets plumous almost throughout. **C. Brownii.**

Herbaceous 1485

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1485. Clusters of flower-headlets whitish.

Slender plant, scantily branched, closely beset with a greyish appressed vestiture; leaves linear, mostly opposite, often blunt; clusters of flower-headlets from ellipsoid to nearly globular; flowers two or three within each involucre; pappus-bristlets plumous only at the summit.

(C. Lessingi, partly.) **C. lacteus.**

Clusters of flower-headlets yellow 1486

1486. Leaves mostly opposite.

Slender plant, scantily branched closely beset with a greyish appressed vestiture; leaves linear, often acute; clusters of flower-headlets from ellipsoid to nearly globular; flowers two or three within each involucre; pappus-bristlets plumous towards the summit.

(C. Lessingi, partly.) **C. citreus.**

Leaves mostly scattered.

Beset with a somewhat cottony vestiture; leaves linear; clusters of flower-headlets from ovate to globular; flowers two or three within each involucre; pappus-bristlets unequal, plumous only at the summit. **C. Sonderi.**

ANGIANTHUS.

1487. Pappus developed 1488

Pappus undeveloped or quite rudimentary 1490

1488. Clusters of flower-headlets attenuated at their base.

Dwarf, beset with somewhat cottony vestiture; leaves short, from cuneate-elliptical to linear; headlets supported by floral leaves, forming yellow or brownish shining almost ellipsoid spikes; involucral bracts four or five; flowers usually two within each involucre; pappus very short, consisting of a torn membrane, usually without any capillary elongations. **A. brachypappus.**

Clusters of flower-headlets almost truncate at their base 1489

1489. Clusters of headlets unsupported by floral leaves.

Dwarf, beset with somewhat cottony vestiture; leaves short, from cuneate-elliptical to linear; flower-headlets forming yellow shining short-cylindric spikes; involucral bracts four or five; flowers one to three within each involucre; pappus producing two or three capillary, at the summit plumously dilated bristlets.

A. tomentosus.

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Clusters of headlets supported by floral leaves.

Dwarf, imperfectly beset with somewhat cottony vestiture; leaves mostly linear; flower-headlets forming yellow shining short-cylindric spikes; involucral bracts generally four; flowers usually two within each involucre; pappus almost placed laterally, producing one slightly fringed scalelet, with a solitary or without any capillary elongations. **A. pleuropappus.**

1490. **Clusters of headlets gradually much attenuated towards their base.**

Annual, dwarf, scantily beset with somewhat cottony vestiture; branches capillary-slender; leaves very short, from ovate- to linear-cuneate; clusters of headlets unsupported by floral leaves, forming almost club-shaped yellow or brownish shining spikes; involucral bracts four to six; flowers one to three within each involucre; pappus reduced to a minute ring. **A. pusillus.**

Clusters of headlets slightly attenuated towards their base.

Annual, very dwarf, scantily beset with somewhat cottony vestiture; branches capillary-slender; leaves very short, from elliptic to linear; involucral bracts only three; flowers usually two within each involucre; clusters of headlets unsupported by floral leaves, forming very short ovate- or cylindric-ellipsoid yellow or brownish shining spikes; pappus absent. **A. tenellus.**

SKIRROPHORUS.

1491. **Floral leaves from ovate- to narrow-lanceolar.**

Annual, quite dwarf, imperfectly beset with somewhat cottony vestiture; stem-leaves short, linear, pointed, some opposite; clusters of flower-headlets capitular; involucral bracts broadish; flowers two within each involucre; pappus reduced to a minutely denticulated ring. (Angianthus Preissianus.) **S. Preissianus.**

Floral leaves quite linear, recurved-pointed.

Annual, quite dwarf, imperfectly beset with somewhat cottony vestiture; leaves all quite short, very narrow and acute, some opposite; clusters of flower-headlets capitular, often almost ovate; involucral bracts narrow; flowers solitary within each involucre; pappus absent.
(Angianthus strictus.) **S. strictus.**

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GNEPHOSIS.

1492. Flowers solitary within each involucre.

Annual, rather dwarf, beset with somewhat cottony vestiture; leaves short, linear, extending to the inflorescence; clusters of flower-headlets capitular, surrounded by a short universal involucre; general receptacle invested with rather long hairlets; pappus tubular towards the base, lobed towards the summit. **G. skirrophora.**

ERIOCHLAMYS.

1493. Pappus quite absent.

Rather dwarf, extensively beset with somewhat cottony vestiture, usually much branched; leaves very short, linear, extending to the inflorescence; flower-headlets very small, coherent by densely intricate hairlets, capitular-crowded, seldom few together or solitary; general receptacle somewhat elevated; corollas generally bearing some slight crisp vestiture outside; fruits glabrous. **E. Behrii.**

CHTHONOCEPHALUS.

1494. Stemless, the flower-headlets crowded and sessile within the tuft of flat radical leaves.

Annual, very dwarf, beset with somewhat cottony vestiture; leaves flaccid, from lanceolar- to spatular-elliptical; headlets of flowers very small, closely approximated into a depressed mass, seldom only few together or solitary; flowers many within each involucre; fruits minute, compressed, glabrous; pappus absent.

C. pseudevax.

HYALOLEPIS.

1495. Almost or quite stemless, the flower-headlets crowded within a general involucre of numerous transparent and shining bracts.

Quite dwarf, occasionally somewhat branched; leaves comparatively long; headlets of flowers in dense almost hemispheric clusters; general involucral bracts in many rows, pale, somewhat radiating and cottony-ciliolated; general receptacle depressed; involucres of headlets consisting of three narrow bracts; fruits slender, somewhat beset with hairlets; pappus consisting of a single capillary bristlet or undeveloped.

(Myriocephalus rhizocephalus.) **H. rhizocephala.**

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ISOETOPSIS.

1496. Stemless, the flower-headlets crowded and sessile within tufts of very narrow radical leaves.

Quite dwarf; leaves comparatively long; headlets of flowers small, their involucral bracts rather few; marginal flowers devoid of stamens; fruits of central flowers imperfect and almost destitute of any pappus. **I. graminifolia.**

GNAPHALODES.

1497. Pappus-bristlets rigid, compressed, conspicuously ciliolated.

Very dwarf, extensively beset with short greyish vestiture; stems very short and prostrate or undeveloped; leaves small, mostly from spatular to obovate, flat, some opposite, the uppermost with their flower-headlets forming depressed clusters; headlets few together or two or rarely solitary, their outer involucral bracts pale, from lanceolar to ovate and spreading, inner appressed and blunt, all coherent by intricate vestiture; flowers of each headlet numerous; bristlets of pappus occasionally six; fruits glabrous. **G. uliginosa.**

POLYCALYMMA.

1498. Pappus-bristlets plumously ciliolated.

Rather robust, extensively beset with cottony or glandule-bearing hairlets; stems usually branchless; leaves much elongated, from lanceolar- to broad-linear, the stem-leaves sessile, the uppermost generally terminated by a petaloid-bracteal apex; flower-headlets forming large clusters, often somewhat stalked; involucral bracts of headlets broadish, shining, transparent, fringy-ciliolated; flowers several or numerous within each involucre; fruits densely beset with silk-like vestiture. Figure 86.
(Myriocephalus Stuartii.) **P. Stuartii.**

CRASPEDIA.

1499. Clusters of flower-headlets often from two to five together.

Scantily beset with somewhat cottony vestiture, mostly branchless; leaves flaccid, from narrow-lanceolar to almost linear, the lower rather long; clusters of flower-headlets from ovate to globular; general involucre rather conspicuous; general receptacle cylindrical; flowers from

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three to six within each involucre; corolla bright-yellow, its lobes rather long; anthers and stigmas often exserted; pappus-bristlets yellow at the summit; fruits beset with silk-like vestiture. **C. pleiocephala.**

Clusters of flower-headlets always singly terminal ... 1500

1500. Pappus-bristlets throughout white.

Perennial, rather tall, branchless or scantily branched from near the base, often beset with short either scattered or interwoven hairlets; lower leaves large, from ovate- to narrow-lanceolar; stem-leaves gradually narrower and shorter, clasping at their base, all flaccid; clusters of flower-headlets large, globular, surrounded by conspicuous, ovate, somewhat transparent, dark-margined bracts; involucres of headlets without any yellow tinge, five- to eight-flowered; corolla very turgid above the middle, oftener bright-yellow than pale-yellowish, rarely whitish; general receptacle almost semi-globular; pappus-bristlets softly plumous-ciliolated; fruits beset with silk-like vestiture. **C. Richea.**

Pappus-bristlets yellow at the summit 1501

1501. Pappus-bristlets plumously ciliolate above the middle.

Usually branchless, beset with appressed somewhat cottony vestiture; leaves lax, broad-linear, the upper shortened, all becoming usually glabrous above; clusters of flower-headlets from ovate to globular, comparatively small; general involucre rather inconspicuous; general receptacle ovate-cylindrical; headlets four- to eight-flowered; corolla bright-yellow, its lobes unusually short; anthers enclosed; pappus-bristlets rather rigid, connate at the base; fruits beset with silk-like vestiture. **C. chrysantha.**

Pappus-bristlets plumously ciliolate throughout.

Perennial, often tall, usually branchless, closely beset with a thin interwoven whitish or greyish vestiture; lower leaves from elliptic- to linear-lanceolar, provided with three prominent longitudinal venules; stem-leaves shorter and narrower, the upper distant; clusters of flower-headlets large, globular; general involucre rather inconspicuous; general receptacle convex, hollow; headlets five- to eight-flowered; corolla bright-yellow; anthers and stigmas often enclosed; pappus-bristlets free to their base, their plumous ciliolation rather short; fruits beset with silk-like vestiture. **C. globosa.**

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TOXANTHUS.

1502. Involucral bracts soon recurved at the upper end.

Somewhat or extensively beset with cottony vestiture; leaves quite short, linear; headlets of flowers sessile; involucral bracts three to five, narrow, downward coherent; corolla long-persistent, bearing some cottony hairlets towards its base, its tube recurved; fruits much pointed. **T. perpusillus.**

Involucral bracts remaining straight to the upper end.

Beset with short scattered glandule-bearing hairlets; leaves quite short, linear, some opposite; headlets of flowers sessile; involucral bracts narrow; corolla long-persistent, its tube recurved; fruits half-emerged, slightly pointed, somewhat beset with extremely minute hairlets.
T. Muelleri.

MILLOTIA.

1503. Pappus-bristlets nearly as long as the corolla, hardly ciliolated.

Somewhat or extensively beset with an appressed or rather cottony vestiture; leaves flaccid, from spatular-elliptical to narrow-linear; involucral bracts few; headlets singly terminating stems or branches; flowers rather numerous in each headlet; corolla often pale; fruits slender, somewhat rough. **M. tenuifolia.**

ERECHTITES.

1504. Involucral bracts rather numerous.

Perennial, beset with a rough or somewhat cottony vestiture; leaves from elliptic- to linear-lanceolar, either entire or indented or lobed; headlets of flowers comparatively broad, in a contracted panicle; accessory bracts at the base of the involucre conspicuous; fruits circularly margined at the summit. **E. hispidula.**

Involucral bracts several 1505

1505. Headlets of flowers relatively long.

Tall, generally somewhat beset with cottony vestiture; leaves from narrow-lanceolar to elongate-linear, entire or scantily indented, often recurved at the margin; headlets of flowers very numerous, in an ample panicle, quite slender; corollas of staminate flowers often four-denticulated; fruits slender, streaked.
E. quadridentata.

Headlets of flowers relatively short 1506

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1506. Headlets in a contracted panicle.

Mostly rough from short rigid hairlets; leaves from elliptic- to linear-lanceolar, indented or lobed, the stem-leaves clasping with their dilated base; fruits beset with very minute hairlets, circularly margined at the summit.
E. arguta.

Headlets in an ample panicle.

Tall, nearly glabrous; leaves almost membranous, from linear- to elliptic-lanceolar, often much elongated and rather regularly denticulated; fruits beset with very minute hairlets, circularly margined at the summit.
E. prenanthoides.

SENECIO.

1507. Corollas of the marginal flowers flatly much expanded 1508

Corollas of all flowers tubular to near the summit ... 1517

1508. Annual 1509

Perennial 1510

1509. Headlets of flowers always singly terminal.

Desert-plant, quite glabrous, never tall; leaves greyish-green, from narrow- to lanceolar-linear, usually entire, the upper sessile; headlet of flowers rather large, its stalk dilated at the summit; involucre ample, without any accessory basal bracts; marginal corollas broadly ligular-expanding; fruits streaked. **S. Gregorii.**

Headlets of flowers generally few together.

Desert-plant, rather robust but never tall, almost glabrous; leaves mostly somewhat pinnatifid; lobes often indented; headlets of flowers comparatively large, their stalks dilated at the summit; involucre ample, with hardly any accessory ... basal bracts; marginal corollas broadly ligular-expanding; fruits beset with very short hairlets. **S. platylepis.**

1510. Headlets of flowers solitary or few together.

Alpine plant, always dwarf, nearly glabrous, often branchless; basal leaves pinnatifid or regularly short-lobed; stem-leaves suddenly or gradually much reduced in size and indented only; marginal corollas conspicuously ligulate; involucre supported by very small accessory bracts; fruits slender, glabrous. **S. pectinatus.**

Headlets of flowers several or numerous 1511

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1511. Conspicuously beset with somewhat cottony vestiture.

Somewhat branched, slightly woody, never tall; leaves firm, rather small, almost linear, revolute at the margin, curved-pointed at the summit, above finally glabrous; headlets of flowers usually several, comparatively small, their stalks also bearing minute bracts; ligular expansions of marginal corollas rather short; fruits somewhat beset with hairlets. **S. Behrianus.**

Almost or quite glabrous 1512

1512. Upper leaves stalked or only slightly clasping ... 1513

Upper leaves very amply clasping 1515

1513. Headlets of flowers small-rayed.

Comparatively tall, very odorous, often riparian; leaves rather long, from linear- to broadish-lanceolar, entire or somewhat serrated; base of the stem-leaves frequently slightly dilated; headlets of flowers numerous, small; fruits usually glabrous. **S. dryadeus.**

Headlets of flowers large-rayed 1514

1514. Accessory bracts much elongated, spreading.

Forest-plant, amply and laxly spreading; leaves large, flaccid, somewhat pinnately cleft into broadish unequal acute segments, the latter again acutely lobed or distantly indented, the terminal segment far the largest; upper leaves less divided; headlets of flowers relatively large, few or several together, acutely rayed; involucral bracts conspicuously pointed, outside blackish, papillular-rough; fruits glabrous, longitudinally furrowed and transversely wrinkled. Figure 90. **S. vagus.**

Accessory bracts much abbreviated, appressed.

Seldom tall, of erect or diffuse growth; leaves or their lobes from narrow-lanceolar to linear, entire or indented or incised, occasionally more dilated and sometimes succulent; uppermost leaves almost reduced to bracts; headlets of flowers few or several together; accessory bracts often black-spotted; fruits generally beset with minute hairlets. ... ... **S. lautus.**

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1515. Leaves all denticulated.

Coast-plant, somewhat shrubby, comparatively tall; leaves from narrow-elliptic to obovate, perceptibly succulent; headlets of flowers rather large, few or several corymbously together, long-rayed; involucre conspicuously supported by accessory small bracts; fruits streaked, often glabrous. **S. spatulatus.**

Upper leaves mostly entire 1516

1516. Headlets of flowers rather large, few together.

Desert-plant, hardly tall; leaves greyish-green, firm, mostly from elliptic- to lanceolar-ovate, often acute, at the base bilobed; headlets of flowers large-rayed; accessory bracts few or almost obliterated; fruits beset with minute hairlets. **S. magnificus.**

Headlets of flowers rather small, many together.

Forest-plant, comparatively tall; leaves almost membranous, greyish-green, mostly from spatular- to elliptic-ovate, often obtuse; headlets of flowers bluntly rayed; accessory bracts few or almost obliterated; fruits usually beset with minute hairlets. **S. velleyoides.**

1517. Inflorescence axillary.

Sylvan, finally arborescent and even of considerable height, densely invested with whitish or greyish stellular hairlets; leaves large, firm, from lanceolar to elliptical, almost or quite entire, soon glabrous above; headlets of flowers rather small, in axillary panicles or racemes or clusters; involucral bracts also beset with stellular hairlets; corollas much exserted; alveoles of receptacle prominent; fruits streaked, glabrous; pappus-bristlets in a single row. **S. Bedfordi.**

Inflorescence terminal 1518

1518. Conspicuously beset with cottony vestiture.

Somewhat woody, seldom tall; leaves firm, from lanceolar to linear, entire or somewhat denticulated, rarely lobed, often recurved at the margin; headlets of flowers small, few or several together; involucral bracts acute, also beset with close vestiture; fruits generally bearing minute hairlets. **S. Georgianus.**

Almost or quite glabrous 1519

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1519. Leaves broad, clasping at the base.

Comparatively tall, somewhat woody, strong-scented; leaves mostly from elliptic- to lanceolar-ovate, indented or denticulated, almost glabrous or underneath scantily or seldom densely beset with a thin somewhat cottony vestiture; headlets of flowers numerous, quite small and particularly slender; corollas almost half-emerged; fruits somewhat beset with minute hairlets.
S. odoratus.

Leaves narrow, without or with slight basal dilatation 1520

1520. Perennial, tall.

Somewhat branched and woody, usually glabrous; leaves firm, from narrow-lanceolar to broad-linear, entire or some indented or denticulated; headlets of flowers very small, several together; corollas nearly half-exserted; fruits beset with minute hairlets. **S. Cunninghami.**

Annual, dwarf.

Often branchless; leaves from linear- to narrow-lanceolar, entire or somewhat denticulated or distantly short-lobed; headlets of flowers quite small, few together; marginal corollas provided with a rudimentary extremely minute ligular expansion; fruits beset with a very short vestiture.
S. brachyglossus.

CANDOLLEACEAE.

CANDOLLEA.

1521. Perennial 1522

Annual 1523

1522. Flowers in spikes.

Somewhat tall, unbranched, quite erect; leaves all radical, tufted, rigid, elongate-linear or slightly lanceolar, imperfectly ciliolar-denticulated; stem constituting an elongate stalk of the spike, as well as the latter beset with scattered glandule-bearing hairlets; flowers rather small; corolla from pale- to intense-red; base of each corolla-lobe bearing minute appendages; fruit turgidly ovate, terminated by the persistent calyx-lobes, two-celled, many-seeded. **C. serrulata.**

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Flowers in corymbs.

Never tall; leaves all radical, copiously and densely tufted, rather short, linear-cylindrical, ending in a bristlet, the tufts connected by thread-like offshoots; inflorescence beset with glandule-bearing hairlets; corolla small, red, the fifth minute lobe bearing two pointed appendages; fruit almost ovate, terminated by the short calyx-lobes, two-celled; seeds very numerous, almost rhomboid-ovate. Figure 92. **C. sobolifera.**

1523. Leaves scattered.

Minute, erect, glabrous; leaves extremely short, from ovate- to linear-lanceolar; flowers few in a corymb; corolla very minute, white or somewhat pink, its lobes without appendages; fruit linear-cylindrical, terminated by the very short calyx-lobes, two-celled, many-seeded. **C. despecta.**

Leaves all radical 1524

1524. Corolla produced downwards into a tubular pointed appendage.

Very small, erect, beset with scattered glandule-bearing hairlets; leaves few or several, extremely short, from narrow-elliptical to orbicular; flowers quite small in a corymb, seldom numerous, exceptionally reduced to two or one; corolla white, often red-spotted, its lobes somewhat indented, without appendages, its tube usually replaced by a slender downward prolongation; fruit almost globular, two-celled, many-seeded, hardly as long as the persistent calyx-lobes. **C. calcarata.**

Corolla without any basal appendage.

Minute, erect, scantily beset with scattered glandule-bearing hairlets; stem capillary; leaves extremely short, from linear- to ovate-elliptical or spatular, never numerous; flowers few in a corymb or two or solitary; bracts unilaterally paired, somewhat succulent; corolla very small, white, its upper lobes about half as long as the lower, red-spotted at the base, all only unidenticulated and without any appendages; gynostemium extremely short; fruit quite small, almost globular, two-celled, many-seeded, terminated by the persistent calyx-lobes; placentaries turgid. **C. perpusilla.**

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LEEWENHOEKIA.

1525. Leaves mostly from narrow-elliptical to lanceolar- or spatular-obovate.

Minute, erect, copiously beset with short glandule-bearing hairlets; leaves very short; flowers axillary, solitary, forming with the upper leaves a foliate corymb or raceme; corolla very small, without any appendages, all its lobes white; stigmas very narrow, divergent; fruit almost globular, one-celled, terminated by the persistent lobes of the calyx; placentary spherical; seeds numerous, turgidly ovate, streaked and dotted. Figure 93. **L. dubia.**

Leaves mostly from cordate- to rhomboidal-orbicular.

Minute, erect, copiously beset with short glandule-bearing hairlets; leaves very short, the upper sessile; flowers axillary, solitary, forming with the upper leaves a foliate corymb or raceme; corolla very small, without any appendages, its very minute fifth lobe dark-purplish; fruit almost globular, one-celled, many seeded, terminated by the persistent lobes of the calyx.
L. Sonderi.

CAMPANULACEAE.

WAHLENBERGIA.

1526. Flowers on long stalks, singly terminating stems or branches.

A perennial herb, flowering already during the first year of its growth, or in a minute state passing away as an annual, from dwarf to rather tall, usually somewhat beset with spreading short hairlets; lower leaves scattered or some opposite, mostly from obovate or spatular to narrow-lanceolar; upper leaves gradually more linear and distant or quite undeveloped, all entire or slightly denticulated; flowers from minute to rather large; lobes of the calyx and corolla as well as the number of stamens five or also not rarely four; corolla blue or outside pale, exceptionally quite white, its tube about as long as the calyx or longer, hardly shorter than its lobes, only slightly turgid; filaments much dilated towards the base; stigmas and ovulary-cells three or rarely two; fruit above the calyx-tube valvular-dehiscent at its short free summit. "Australian Bellflower." **W. gracilis.**

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ISOTOMA.

1527. Leaves large, pinnatilobed.

Perennial, ascending or erect, excessively acrid, of unpleasant odour, glabrous except portions of the flower; leaves scattered, irregularly dissected or lobed, the segments or lobes narrow; flower-stalks elongated, sometimes very long, all axillary and solitary; flowers very large; corolla usually outside pale, the lobes inside blue or somewhat violet, the tube longer than the lobes, slightly curved; filaments and style beset with short hairlets; anthers exserted; fruit obconic-ellipsoid, terminated by the narrow calyx-lobes, two-celled; seeds numerous, foveolar-rough. **I. axillaris.**

Leaves small, lobeless.

A small perennial creeping plant, beset with very minute hairlets; leaves scattered, firm, from linear- to ovate-elliptical, entire or somewhat denticulated; flower-stalks from as long as the leaves to much longer; flowers small; corolla blue or not rarely almost white, the tube inside as well as the filaments beset with short hairlets; fruit small, nearly hemi-ellipsoid, two-celled, terminated by the short lobes of the calyx; seeds many, smooth.
I. fluviatilis.

LOBELIA.

1528. Flowers terminal 1529

Flowers axillary 1532

1529. Flowers singly terminating very elongated stalks.

Ascendant, glabrous; lower leaves mostly cuneate-obovate, incised, the others from lanceolar to nearly linear and somewhat indented; flowers rather large, on thin elongated stalks, terminating stems and branches; corolla blue inside, its lowest lobe ovate-cuneate; fruit somewhat bulging on the upper side; seeds numerous, minute.
L. rhombifolia.

Flowers forming unilateral racemes 1530

1530. Stems somewhat turgid and succulent.

Annual, glabrous; stem usually branchless; leaves narrow-linear or thread-like, usually entire; bracts linear, pointed; stalklets shorter than the flowers; corolla blue inside, its upper lobes curved and much pointed, glabrous, lower lobes narrow-lanceolar and pointed; fruit very bulging on the upper side; seeds brown, very minute, almost dust-like. **L. microsperma.**

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Stems slender, hardly succulent 1531

1531. Fruits much bulging on the upper side.

Annual, glabrous, hardly branched; leaves linear, the lower broader and denticulated; corolla blue inside, its upper lobes somewhat beset with minute hairlets, pointed; lower lobes rather acute; seeds very minute, almost dust-like. **L. Browniana.**

Fruits slightly bulging on the upper side.

Often rather tall; leaves mostly narrow and indented, the lower not rarely lanceolar; flowers rather large; corolla blue, rarely pink inside, its upper lobes somewhat beset with minute hairlets; all lobes acute; seeds small, ovate-triangular. **L. simplicicaulis.**

1532. Flower-stalklets much elongated 1533

Flower-stalklets much abbreviated 1534

1533. The two upper lobes of the corolla much narrower than the three lower.

Perennial, lax, glabrous; leaves often almost membranous, from ovate- to elliptic-lanceolar, irregularly denticulated; flowers axillary, solitary; stalks very thin, gently recurved; corolla purplish or inside whitish; upper lobes of the corolla very acute; perfect stamens and pistils in distinct flowers, mostly on separate plants; fertile fruits obconic-hemiellipsoid; seeds ovate. Figure 91.
L. purpurascens.

All the lobes of the corolla nearly of equal size.

Creeping, beset with minute hairlets; leaves small, almost membranous, from ovate- to orbicular-rhomboid; flowers small, axillary, solitary; lobes of the corolla above white, beneath pale-violet; perfect stamens and pistils in distinct flowers, mostly on separate plants; fertile fruit obconic-hemiellipsoid; seeds ovate.
L. pedunculata.

1534. Corolla-lobes turned unilaterally.

Perennial, rather dwarf, glabrous; leaves from lanceolar- to elliptic-ovate, conspicuously denticulated, often somewhat crisped; flowers axillary, solitary; lobes of the corolla equal, usually whitish on the upper side; perfect stamens and pistils in distinct flowers, mostly on separate plants; fertile fruit ovate-globular. **L. concolor.**

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Corolla-lobes turned bilaterally 1535

1535. Fruits much compressed.

Creeping, glabrous; sap hardly whitish; leaves succulent, from elliptic- to lanceolar-ovate, entire; flowers small, axillary, solitary; lobes of the corolla nearly equal, white inside; tube very short; perfect stamens and pistils in distinct flowers, mostly on separate plants; fertile fruit roundish-ovate; seeds comparatively large, elliptic.
L. platycalyx.

Fruits turgid or cylindrical 1536

1536. Leaves from orbicular to ovate.

Alpine plant, creeping, beset with very short hairlets; leaves quite small, somewhat denticulated; flowers minute, axillary, solitary; perfect stamens and pistils in distinct flowers, mostly on separate plants.
L. Benthami.

Leaves from cuneate-lanceolar to linear 1537

1537. Beset with very short hairlets.

Creeping; leaves small, denticulated; flowers quite small, axillary, solitary; corolla blue or occasionally purplish, its lobes nearly equal; perfect stamens and pistils in distinct flowers, mostly on separate plants; fertile fruit oblique-ovate. **L. pratioides.**

Quite glabrous 1538

1538. Fruit almost globular.

Alpine small creeping plant; leaves very short, nearly linear, entire; flowers minute, axillary, solitary, almost sessile; lobes of the corolla nearly equal, white inside; tube very short; fertile fruit very small. **L. gelida.**

Fruit almost cylindrical.

Lax, occasionally somewhat creeping, sometimes quite tall and rambling; stem and branches prominently triangular; lower leaves often ovate-cuneate, the upper from elliptic- to linear-lanceolar, all entire or some slightly denticulated; flowers small, axillary, solitary, usually on short stalklets; corolla small, generally bluish inside, its upper lobes much narrower than the lower. **L. anceps.**

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GOODENIACEAE.

BRUNONIA.

1539. Stems leafless, except at the base, terminated by solitary capitular clusters of small flowers.

Perennial, densely or imperfectly beset with short hairlets; stems branchless, peduncular; leaves from narrow- to spatular- or obovate-lanceolar, entire; flowers singly surrounded by bracts and bracteoles, constituting involucrated headlets; calyx-lobes very narrow, plumously ciliolated, usually glandular-tipped, forming a pappus; corolla and stamens inserted below the ovulary; filaments connate towards the base; cover of the stigma bilobed, without marginal ciliolation; ovulary uni-ovulate; seed without any albument. **B. Australis.**

DAMPIERA.

1540. Leaves almost flat 1541

Leaves recurved at the margin 1542

1541. Branchlets hardly angular.

Somewhat shrubby; leaves from orbicular to ovate and elliptical, clothed with stellular-branched hairlets underneath, occasionally indented; flowers generally few and somewhat distant on each of the axillary and terminal stalks; corolla densely beset outside with dark plumously branched hairlets; fruit very small, ellipsoid, one-seeded. **D. Brownii.**

Branchlets very angular.

Almost herbaceous; leaves firm, from elliptic to linear or the lower almost ovate or cuneate, often indented and glabrous; corolla outside beset with a brownish velvet-like vestiture; fruit very small, one-seeded. **D. stricta.**

1542. Lower side of leaves almost concealed by their revolute margin.

Somewhat shrubby, but never tall, partly beset with short hairlets; branchlets hardly angular, though streaked; leaves often small, from elliptic- to broad-linear, blunt, generally soon almost glabrous above, sometimes fascicular-crowded; corolla beset with a rather dark vestiture outside, its expanding membranes blue or not rarely purplish or white; fruit very small, one-seeded. **D. rosmarinifolia.**

Lower side of leaves partly covered by their recurved margin 1543

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1543. Corolla beset with starry-velvety vestiture outside.

Somewhat shrubby, but never tall, extensively invested with branched often greyish hairlets; branchlets hardly angular; leaves from narrow-elliptic to ovate; flowers from one to three on each stalk, rather small; fruit very small, one-seeded. **D. marifolia.**

Corolla beset with a plumous-velvety vestiture outside.

Somewhat shrubby; branches hardly angular, but streaked; leaves from linear- to elliptic-lanceolar, occasionally somewhat indented, slightly beset with a short vestiture underneath; flowers often in compound leafy racemes; hairlets of the corolla dark; fruit very small, one-seeded. **D. lanceolata.**

VELLEYA.

1544. Stem undeveloped.

Alpine, dwarf, often beset with scattered spreading hairlets; leaves all crowded at the root and usually surpassing the inflorescence, from elliptic- to spatular-obovate, entire or slightly denticulated; bracteoles narrow; segments of calyx three, elliptic-lanceolar; corolla small, dingy-yellowish; seeds without any marginal expansion. **V. montana.**

Stem developed 1545

1545. Bracts disconnected.

Seldom quite glabrous; leaves all radical, from obovate to elliptic- and narrow-lanceolar, often deeply incised; flowers in a dichotomous cyme; bracts opposite, quite foliaceous, the lower large and generally lobed or indented; segments of calyx five, four of them narrow-lanceolar or elliptical, the fifth larger and more ovate; corolla large, yellow, with a basal conic-cylindrical protrusion; seeds brownish, surrounded by a broad membranous expansion. **V. paradoxa.**

Bracts connate.

Rather tall desert-plant, glabrous and greyish-green; leaves all radical, from obovate to elliptic- or elongate-lanceolar, entire or indented; flowers in a dichotomous cyme; bracts firm, opposite, large, entire, acute; segments of calyx five, from deltoid to ovate-lanceolar, the uppermost largest; corolla purplish, the expanding membranes of its lobes narrow or rudimentary; seeds brownish, surrounded by a broad membranous expansion. Figure 95. **V. connata.**

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SELLIERA.

1546. Creeping, glabrous.

Perennial plant, chiefly maritime; leaves from ovate- to linear-spatular, entire; flowers on rather short stalks, solitary or two or three together; corolla small, rigid; stigma-cover with only slight or hardly any ciliolation; fruit small, turgidly ovate; seeds without any membranous margin. **S. radicans.**

SCAEVOLA.

1547. Quite shrubby 1548

Almost herbaceous 1549

1548. Thorny-branched.

A desert-shrub; spinules sometimes ramified; leaves generally small, from obovate- to linear-elliptical, entire, often clustered; flowers small, on short stalks, solitary or two or few together; corolla yellowish inside, its lobes somewhat fringed; fruit succulent. **S. spinescens.**

Thornless.

A coast-shrub, viscid, glabrous; leaves large, very firm, flat, from orbicular to spatular-obovate, occasionally verging into a lanceolar form, closely denticulated except towards the base; flowers in spikes; floral leaves reduced to bracts; corolla blue inside, glabrous outside, its expanding membranes narrow; ciliolation of the stigma-cover faint; fruit rather small, dry. **S. crassifolia.**

1549. Prostrate 1550

Erect 1552

1550. Leaves quite entire.

A robust coast-plant, widely spreading, beset with appressed shining hairlets; leaves often very large, rather carnulent, mostly from obovate to almost spatular-elliptical or the upper narrower; flowers in terminal spikes; corolla blue or outside purplish, bearing inside towards the base many short very narrow tipped processes; fruit comparatively large, succulent, purplish outside.
S. suaveolens.

Leaves indented 1551

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1551. Flowers distinctly stalked.

Creeping, generally beset with scattered spreading hairlets; leaves from elliptic- to ovate-lanceolar, irregularly indented; flowers axillary, solitary, on short stalks, supported by broadish foliaceous bracteoles; corolla whitish inside; stigma-cover without any conspicuous marginal ciliolation; fruit small, dry. **S. Hookeri.**

Flowers almost sessile.

Often diffuse and much beset with generally short hairlets; leaves rather small, mostly cuneate-ovate and indented, the floral leaves gradually much diminished in size; corolla blue or whitish inside except towards the base; its expanding membranes narrow; style as well as the inner base of the corolla invested with soft hairlets; ovulary one-celled; fruit minute, dry.
S. microcarpa.

1552. Flowers almost sessile.

Never tall, somewhat beset with short hairlets; leaves rather flaccid, from cuneate- to elliptic-obovate, indented, the lower comparatively large; corolla rather large, blue inside except towards the base; stigma-cover densely invested with soft almost purplish hairlets irrespective of the marginal ciliolation; ovulary two-celled; fruit small, dry. **S. aemula.**

Flowers on long stalks 1553

1553. Corolla-lobes expanding into broad marginal membranes.

Beset with spreading rather long and rigid hairlets; leaves very long, from broad-linear to elliptic-lanceolar, some distantly indented; flowers quite large, few together or solitary, supported by very long foliaceous bracteoles; calyx-lobes elongated; corolla blue and invested with soft hairlets towards the base inside; stigma-cover conspicuously beset with hairlets; fruit dry. **S. hispida.**

Corolla-lobes with hardly any marginal expanding membranes.

Beset with rather rigid hairlets; leaves from linear- to cuneate- and elliptic-lanceolar, somewhat indented; flowers rather large, solitary, supported by linear elongated foliaceous bracteoles; lobes of calyx conspicuous, narrow; corolla glabrous inside and lilac except towards the base; style nearly glabrous; fruit small, dry.
... . **S. apterantha.**

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GOODENIA.

1554. Shrubby 1555

Herbaceous 1558

1555. Membranes of the corolla purplish.

Beset with short glandule-bearing hairlets; leaves short, from broad-linear to somewhat lanceolar, entire, revolute at the margin; flowers solitary, on axillary conspicuously bracteolate stalks; corolla except its expanding membranes outside invested with stellular hairlets; fruit small, turgidly ovate; dissepiment very short; seeds two, slightly compressed, rather pale, quite smooth and shining, with a small carnulent appendage.

G. barbata.

Membranes of the corolla yellow 1556

1556. Leaves sessile, clasping.

Beset with glandule-bearing hairlets; leaves from cordate to elliptic- or lanceolar-ovate, closely denticulated; flowers solitary or two or three together in the axils, on very short stalks; corolla invested with glandular hairlets outside; fruit ellipsoid; seeds pale-brownish, without any marginal expansion. **G. amplexans.**

Leaves stalked 1557

1557. Leaves of rather thin texture, closely denticulated.

Tall, glabrous, viscid; leaves from almost cordate- to lanceolar-ovate; flowers several together on rather short axillary stalks; corolla glabrous outside; fruit comparatively narrow, dissepiment extending far through the cavity; seeds flat, pale, ovate, without any marginal expansion. **G. ovata.**

Leaves of rather thick texture, imperfectly denticulated.

Glabrous, viscid; lower leaves from orbicular to ovate, upper from ovate- to linear-lanceolar, gradually narrowed downward; flowers solitary or two or few together, on axillary rather short stalks; corolla glabrous outside, its expanding membranes narrow; style towards the summit beset with a whitish vestiture; fruit rather short, almost ellipsoid; seeds flat, pale, elliptical, without any marginal expansion. **G. varia.**

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1558. Membranes of corolla purplish.

Subtilely beset with glandule-bearing short hairlets; leaves flaccid, deeply lobed, the terminal lobe the largest and usually from cordate- to lanceolar-ovate, all denticulated; flowers large, axillary, solitary, on rather short stalks; corolla nearly glabrous outside, with a lateral narrow protrusion towards the base; fruit almost ellipsoid; seeds flat, pale-brownish, without any marginal expansion. Figure 94. **G. Macmillani.**

Membranes of the corolla yellow, rarely pale ... 1559

1559. Erect or ascending 1560

Prostrate or diffuse 1566

1560. Seeds numerous, minute 1561

Seeds several or few, comparatively large 1563

1561. Panicle placed hardly beyond the basal leaves.

Dwarf; leaves nearly glabrous, the radical leaves crowded, from elliptic- to linear-lanceolar, entire, the floral leaves much reduced in size; panicle beset with very short spreading hairlets; flowers rather small, few or several in each panicle; all corolla-lobes on both sides equally membranous-expanded; style bearing soft hairlets; fruit very small; seeds orbicular, shining, somewhat turgid.

G. humilis.

Panicle placed much beyond the basal leaves ... 1562

1562. Basal leaves from narrow-lanceolar to almost linear, mostly entire.

Never tall, nearly glabrous; radical leaves crowded; stem-leaves few, very narrow, gradually shortened; flowers small, usually many in each panicle; all corolla-lobes on both sides equally membranous-expanded; fruit quite small, almost ovate; seeds shining, smooth.

G. gracilis.

Basal leaves from obovate to almost lanceolar, mostly indented.

Never tall, often beset with minute spreading hairlets; radical leaves crowded; stem-leaves linear, few or almost none; floral leaves reduced to bracts; flowers small, usually many in each panicle; all corolla-lobes on both sides equally membranous-expanded; style bearing soft hairlets; fruit quite small, almost ovate; seeds pale-brownish, orbicular, shining, somewhat turgid.

G. paniculata.

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1563. Flowers somewhat clustered into a spike-like raceme.

Stems branchless; leaves firm, mostly basal and glabrous, elongated-linear, nearly or quite entire; floral-leaves bract-like; flowers rather large; corolla, except its membranous expansions, outside densely beset with partly stellular hairlets, its upper lobes unequally membranous-expanded; fruit ellipsoid; seeds flat, without any marginal expansion. **G. stelligera.**

Flowers on long scattered stalks 1564

1564. Corolla, except its expanding membranes, beset with silk-like vestiture outside.

Never tall, nearly glabrous; stems slender, branchless; leaves greyish-green, from ovate- to narrow-lanceolar, entire or seldom indented; flowers somewhat fragrant, axillary and terminal, solitary; bracteoles absent; lobes of the calyx longer than the tube or as long; corolla-lobes all on both sides broadly expanded into pale-yellow membranes; transparent appendages of the upper corolla-lobes for protection of the stigma-cover conspicuous; style invested with short soft hairlets; fruit turgid; dissepiments considerably shorter than the fruit-cavity; seeds pale-brownish, with a broad marginal expansion. **G. glauca.**

Corolla almost or quite glabrous outside 1565

1565. Leaves entire or remotely denticulated.

Slender, occasionally dwarf, somewhat beset with generally appressed hairlets; leaves from almost ovate- to narrow-lanceolar, the stem-leaves scattered and distant; flowers mostly axillary; bracteoles absent; all the corolla-lobes broadly expanded on both sides into bright-yellow membranes; style short; cover of stigma invested with short hairlets; fruit small, its long stalk finally reversed; seeds plano-convex, dull-brownish, hardly margined. **G. elongata.**

Basal leaves mostly pinnatisected.

Somewhat beset with appressed hairlets or rarely glabrous; leaves mostly radical, their lobes usually narrow; stem-leaves often only at the base of the flower-stalks, generally diminutive; flowers usually rather large, mostly or all terminal, either solitary or two or few near together, on separate stalks; bracteoles absent; upper lobes of the corolla only unilaterally broad-expanded; cover of stigma beset with short soft hairlets; dissepiment considerably shorter than the fruit-cavity, semi-circularly excised; seeds flat, black, expanded into a broad pale margin. **G. pinnatifida.**

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1566a. Flowers quite minute.

Annual, scantily beset with spreading hairlets; basal leaves crowded, pinnatilobed or some merely short-incised; stem-leaves present only at the inflorescence, small, from rhombous-cuneate to lanceolar, scantily indented or entire; stalks elongated, corymbously or racemously approximated, unprovided with bracteoles; lobes of the calyx comparatively broadish; expansions of the corolla from yellow turning white or purplish; fruit globular-ovate, nearly unilocular; seeds few, rather large, collateral, blackish when ripe, surrounded by a pale broadish margin. **G. pusilliflora.**

Flowers rather small or of conspicuous size ... 1566b

1566b. Upper corolla-lobes almost dimidiated 1567

All corolla-lobes on both sides equally expanded ... 1568

1567. Ripe seeds brownish.

Nearly glabrous, producing very slender offshoots; leaves rather small, tufted at the base and at the upper end of the stems, from broad- to linear-lanceolar, mostly entire; flowers small, solitary, on rather long and thin stalks, crowded among leaves at and near the summit, rarely at the base of the stems; bracteoles usually absent; corolla outside beset with appressed shining vestiture; fruit small, roundish-ovate; dissepiment extending far into the fruit-cavity; seeds flat, expanded into a pale rather narrow margin. **G. heteromera.**

Ripe seeds black.

Seldom much elongated, sometimes erect, beset with minute spreading hairlets; leaves throughout approximated, basal and scattered, from rhomboid-ovate to narrow-lanceolar, denticulated or occasionally some incised; flowers rather small, solitary, axillary, on conspicuous stalklets; bracteoles absent; corolla with an unilateral protrusion towards the base, its outside vestiture subtile, very short, without any lustre, all its lobes on both sides equally membranous-expanded; fruit roundish, compressed, almost unilocular; seeds few, comparatively large, orbicular, all placed at the same level, surrounded by a broad marginal pale expansion.

G. cycloptera.

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1568. Leaves scattered along elongated stems.

Here chiefly alpine, widely prostrate; leaves from cordate-orbicular to rhomboid-ovate, irregularly denticulated, here usually beset underneath with a dense white vestiture; flowers from one to three on long axillary stalks; bracteoles somewhat distant from the flowers; calyx comparatively small; corolla outside beset with minute hairlets; fruit ovate; seeds flat, without any marginal expansion. **G. hederacea.**

Leaves tufted on abbreviated or almost obliterated stems.

Partially or extensively beset with somewhat cottony or only slightly interwoven vestiture; leaves from almost obovate to lanceolate-linear, distantly denticulated; flowers rather large, always solitary, on very long almost radical stalks; bracteoles distant from the flowers, at the angular junction of the stalk and stalklet; corolla outside densely beset with hairlets; fruit turgidly ovate; seeds flat, elliptical, without any marginal expansion.
G. geniculata.

GENTIANEAE.

LIMNANTHEMUM.

1569. Erect, semiaquatic.

Leaves on long stalks, from ovate- to renate-cordate, all basal and without any denticulation; flowers in a cymous panicle; corolla yellow, its tube short, its lobes neither fringed nor crested, but minutely denticulated and inside towards the base much beset with tender hairlets; fruit towards the summit longitudinally dehiscent; seeds appendiculated, lenticular-ovate, never numerous.
L. exaltatum.

Floating 1570

1570. Lobes of corolla crested along the middle by a fringed broad membrane inside.

Leaves from the nodes of the stem, mostly cordate-orbicular, long-stalked, notched-denticulated, beneath dotted with glandules; flowers solitary or two or more together on long stalklets; corolla yellow, its tube short, its lobes conspicuously fringed at the margin and also much beset with tender hairlets inside towards the base; stigmas fringed; fruit almost indehiscent; seeds numerous, ovate, smooth. **L. crenatum.**

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Lobes of corolla without any crested membrane along the middle inside.

Leaves from the nodes of the stem, from cordate- to renate-orbicular, long-stalked, without any denticulation; flowers solitary or two or three together on long stalklets; corolla yellow, its tube short, its lobes slightly or hardly fringed along the margin, sparingly beset with tender hairlets inside towards the base; fruit almost indehiscent; seeds numerous, biconvex. **L. geminatum.**

ERYTHRAEA.

1571. Flowers nearly sessile, often forming somewhat unilateral and cymous spikes.

Never tall, on exposed coasts often very dwarf; leaves sessile, from oval- to narrow-elliptic; flowers small, occasionally reduced to three or two or even one; corolla rosy-red, much oftener five- than four-lobed; style undivided; stigma somewhat bilobed; fruit ellipsoid, enclosed. (E. Australis.) **E. spicata.**

SEBAEA.

1572. Corolla bright-yellow, five-lobed.

Never tall, always glabrous; leaves small, sessile, from ovate to cordate-orbicular, sometimes slightly pointed; cyme simple or compound, the middle stalklets abbreviated, the others elongated; segments of calyx five, acute, the carinular venule of each prominent; lobes of the corolla pointed; stamens high-inserted on the corolla; fruit ellipsoid-ovate. **S. ovata.**

Corolla yellowish-white, four-lobed.

Never tall, always glabrous, restricted to brackish soil; leaves small, sessile, mostly ovate or the lower roundish, somewhat succulent, their venules inconspicuous; cyme simple; none of the stalklets elongated; segments of calyx four, obtuse, the carinular venule of each slightly prominent; lobes of the corolla blunt; stamens high-inserted on the corolla; fruit ovate-ellipsoid. Figure 96. **S. albidiflora.**

GENTIANA.

1573. Corolla with appendages between its lobes.

Very dwarf, annual, glabrous; leaves quite small, from almost orbicular to ovate, slightly pointed; flowers very small, generally terminal and solitary, nearly sessile;

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lobes of the calyx mostly ovate-semilanceolar; corolla outside greenish, inside blue or whitish, its lobes about half as long as the tube, the appendages minute; fruit almost ovate, compressed. **S. quadrifaria.**

Corolla without any appendages between its lobes.

Rather tall, mostly alpine and perennial, always glabrous; leaves from orbicular-ovate to linear-lanceolar, the basal leaves crowded; flowers comparatively large, fragrant, on long stalklets, often forming corymbs, sometimes paniculate or occasionally reduced to few or two or one; lobes of the calyx narrow-semilanceolar; corolla rather long-lobed, whitish except towards the yellowish base, its venules generally blue; stamens low-inserted on the corolla; fruit ellipsoid-cylindrical. **G. saxosa.**

JASMINEAE.

JASMINUM.

1574. **Leaves consisting of three narrow and rather long leaflets.**

A desert-plant, often beset with minute hairlets; leaves on comparatively short stalks; leaflets from narrow-lanceolar to broad-linear, or occasionally somewhat elliptical; flowers in cymous or almost racemous panicles; lobes of the calyx denticular-short; corolla whitish inside, yellowish outside; fruit succulent, developing usually only one globular fruitlet, shining-black outside; seeds without albument. **J. lineare.**

NOTELAEA.

1575. **Leaves from ovate- to broad-lanceolar, their secondary and ultimate venules prominent.**

Finally arborescent; leaves firm; flowers in axillary hardly stalked racemes; petals yellowish; anthers almost sessile, clasped by the petals; fruit from ovate to nearly globular, bluish-black outside; seeds provided with albument. **N. longifolia.**

Leaves from narrow- to linear-lanceolar, their secondary and ultimate venules faint.

Finally arborescent, sometimes then a large tree, always restricted to forest-valleys; leaves firm; flowers in axillary hardly stalked racemes; anthers almost sessile, clasped by the petals; fruit white or variously red or purplish outside; seeds provided with albument. Figure 100. **N. ligustrina.**

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LOGANIACEAE.

MITRASACME.

1576. **Calyx four-cleft or four-lobed** 1577

Calyx two-lobed 1580

1577. **Calyx cleft to near the base.**

A very small alpine herb, perennial and prostrate, almost glabrous; leaves from orbicular- to elliptic-obovate; flowers axillary, solitary, short-stalked or almost sessile; outer calyx-segments resembling in form diminutive leaves, inner still smaller and lanceolar; lobes of the corolla considerably shorter than its tube; stamens high-inserted; styles from beginning of growth quite separated, soon divergent; fruit almost deltoid, dry, dehiscent between the styles. **M. montana.**

Calyx lobed to about the middle 1578

1578. **Erect.**

Perennial, scantily or copiously beset with hairlets; leaves small, from elliptic- to linear-lanceolar, recurved along the margin; flower-stalks elongated, bearing an irregular umbel; stalklets almost capillary; lobes of corolla about as long as its tube, beset with minute hairlets at and near the base; fruit roundish, dry, dehiscent between the styles. **M. polymorpha.**

Prostrate 1579

1579. **Lobes of the corolla longer than its tube.**

Perennial, weak, scantily beset with hairlets; leaves very small, from ovate- to lanceolar-elliptical; flowers axillary, solitary, nearly sessile; corolla glabrous, its tube extremely short; stamens emerging; fruit roundish, dry, dehiscent between the styles. **M. serpillifolia.**

Lobes of the corolla shorter than its tube.

Perennial, somewhat firm, usually much beset with rather rigid hairlets; leaves small, from orbicular- to lanceolar-ovate; stalklets axillary, solitary, from about as long as the flowers to much longer; corolla at its orifice beset with minute hairlets; stamens enclosed, low-inserted; fruit dry, roundish but with an excised summit, dehiscent between the styles. **M. pilosa.**

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1580. Styles permanently united at and near the summit.

Annual, erect, often very small, almost or quite glabrous; stem and branches wiry; leaves very small, from linear- to elliptic-lanceolar, sometimes hardly any developed at the base of the stem; flowers in terminal umbels or only three or two together or singly terminal; their stalklets much elongated, thread-like but rigid; lobes of the calyx usually shorter than its tube, often deltoid; corolla glabrous, hardly emerging, its tube much longer than its lobes; stamens low-inserted; fruit dry, enclosed, somewhat roundish, dehiscent between the styles.

M. paradoxa.

Styles quite separated from each other.

Annual, always very small, mostly erect, glabrous, branchless or scantily branched; leaves from elliptic- to narrow-linear; flowers minute, often singly terminal or some axillary or occasionally two or three together, their stalklets thread-like, rather elongated; lobes of the calyx always shorter than its tube, from hardly deltoid to nearly truncate; corolla glabrous, almost enclosed; styles from beginning of growth disconnected; fruit dry, somewhat square, dehiscent between the styles. **M. distylis.**

LOGANIA.

1581. Leaves very diminutive.

A desert-plant, almost herbaceous, occasionally somewhat twisted, partly beset with minute hairlets; leaves from deltoid to semilanceolar; flowers small, in almost sessile clusters or some solitary; lobes of the calyx acute; corolla inside partly beset with subtile hairlets; fruit almost ovate-ellipsoid, towards its summit dehiscent; seeds black, narrow-ellipsoid, channelled beneath. Figure 97.

(Euosma nuda.) **L. nuda.**

Leaves well developed 1582

1582. Leaves recurved at the margin.

A riparian plant, tall-shrubby; leaves firm, elongated, from narrow-lanceolar to broad-linear, occasionally almost flat, always pale underneath; flowers small, mostly in axillary cymous panicles, only some fruit-bearing; lobes of the calyx obtuse; stamens enclosed; fruit rather small, dehiscent towards its summit; seeds black, oval.

(Euosma albiflora.) **L. floribunda.**

Leaves flat 1583

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1583. Leaves broad-linear.

A desert-plant, dwarf-shrubby; leaves firm, rather short, blunt or pointed; flowers small, in compact stalked mostly terminal cymes, only some fruit-bearing; lobes of the calyx blunt; corolla nearly glabrous inside; fruit small, almost ellipsoid-ovate, dehiscent towards its summit; seeds black, oval.

(Euosma linifolia.) **L. linifolia.**

Leaves from almost orbicular to lanceolar-elliptical.

A litoral plant, dwarf-shrubby, almost glabrous; leaves firm, nearly sessile; flowers small, in compact mostly terminal cymes, only some with fertile pistil; lobes of the calyx blunt; corolla beset with minute hairlets at and near its orifice; fruit small, almost ellipsoid-ovate, pointed, dehiscent towards its summit; seeds black, oval.

(Euosma ovata.) **L. ovata.**

PLANTAGINEAE.

PLANTAGO.

1584. Leaves rather thin, flaccid.

Perennial but flowering in the first year of its growth, generally beset with short hairlets; leaves all basal, from elliptic- to linear-lanceolar, entire or short-lobed; spikes on elongated stalks, formed by several or many flowers or occasionally reduced to three or two flowers; ovules four in each ovulary. **P. varia.**

Leaves thick, rigid 1585

1585. Leaves rather large.

Alpine, perennial; leaves all basal, shining, glabrous, from broad- to narrow-lanceolar, entire, radiatingly arranged; spikes on short stalks, capitular, few-flowered or rarely the flowers reduced to two or one; ovules eight in each ovulary. Figure 98. **P. stellaris.**

Leaves minute.

Alpine, perennial, very depressed, forming large patches by emitting suckers; leaves from narrow- to linear-lanceolar, in star-like tufts; flowers usually one or two on each stalk; ovules eight in each ovulary.

P. Gunnii.

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SOLANACEAE.

SOLANUM.

1586. **Annual.**

A poisonous herb, often beset with short hairlets; leaves flaccid, almost ovate or verging into a rhomboid form, somewhat denticulated or sinuous; flowers very small, drooping, in lateral umbel-like cymes; corolla white, deeply cleft, its lobes acute; anthers coherent; fruit quite small, globular, black or green outside. (Probably immigrated.) **S. nigrum.**

Perennial, either herbaceous or shrubby 1587

1587. **Always without any prickles** 1588

Usually prickly 1590

1588. **Fruit orange-colored, mostly egg-shaped.**

Shrubby, tall, glabrous; branches cylindrical, dark-purplish; leaves distinctly stalked, often lanceolar, undivided or oftener some with few entire semilanceolar elongated lobes; corolla large, five-cleft to the middle, inside violet, outside often whitish; filaments shorter than the anthers, the latter disconnected; fruit large, poisonous. **S. aviculare.**

Fruit greenish, mostly globular 1589

1589. **Leaves long-lobed.**

Shrubby, finally tall, glabrous; branches robust, green, very angular; leaves large, sessile, decurrent, often lanceolar, undivided or oftener some with few semilanceolar elongated lobes; corolla large, violet, slightly lobed; filaments about as long as the anthers, the latter disconnected; fruit large. Figure 103. **S. vescum.**

Leaves hardly lobed.

Somewhat shrubby, seldom tall, always glabrous, scantily branched; leaves generally narrow-lanceolar, rather elongated, entire or near the base short-lobed; corolla violet inside; anthers disconnected; fruit moderately large, nodding. **S. simile.**

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1590. Almost glabrous.

A nearly herbaceous forest-plant, somewhat tall or depressed; prickles reddish-yellow, numerous all over the plant; leaves rather large, quite thin, in outline from almost ovate to lanceolar-elliptical, acutely lobed; flowers in often short racemes or sometimes reduced to two or even only one; corolla violet, beset with stellular hairlets outside; fruit spherical, whitish- and green-mottled outside. **S. armatum.**

Beset with stellular hairlets 1591

1591. Vestiture consisting of mostly scattered hairlets.

A nearly herbaceous forest-plant, never tall; prickles reddish-yellow, numerous all over the plant; leaves rather large, thin, from roundish- to elliptic-ovate, with usually short acute lobes; flowers two together or solitary, without any stalk to the stalklets; corolla violet; fruit yellowish outside. **S. pungetium.**

Vestiture consisting of mostly close-approximated hairlets 1592

1592. Prickles numerous all over the plant.

A dwarf nearly herbaceous desert-plant, beset with a thin somewhat velvet-like vestiture; prickles reddish-yellow; leaves in outline from almost ovate to elliptical, sinuous-pinnatifid, above soon nearly glabrous, their lobes blunt; flowers few in each raceme or only two together; corolla deeply cleft into acute lobes; fruit globular, yellowish outside. **S. lacunarium.**

Prickles scantily dispersed over the plant or almost absent.

A dwarf herbaceous desert-plant, beset with a very thin somewhat velvet-like vestiture; prickles short, reddish-yellow, occasionally quite absent; leaves from ovate- to narrow- or lanceolar-elliptical, entire or towards the base slightly sinuous; flowers few in each raceme or only two together; corolla violet, short-lobed; fruit rather small, yellowish outside. **S. esuriale.**

LYCIUM.

1593. Leaves small, turgid and carnulent.

A rather dwarf desert-shrub, glabrous; branchlets rigid, spinescent; leaves slightly compressed, broadly clavate, often somewhat clustered, almost succulent; flowers small, solitary, their stalklets about as long as the calyx; corolla white, violet-streaked, its tube much longer than its lobes; stamens of unequal length, all enclosed; fruit ovate-globular, bright-red outside. **L. Australe.**

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NICOTIANA.

1594. Corolla somewhat greenish outside, the lobes on the upper side whitish or slightly yellowish.

Herbaceous, often tall and much beset with viscid hairlets; lower leaves from almost ovate to somewhat spatular; upper leaves few, mostly sessile, from nearly cordate to lanceolar or occasionally absent; flowers generally soon distant, in simple or somewhat compound racemes, varying from rather small to quite large; lobes of the corolla roundish, considerably shorter than its tube; fruit almost ovate; seeds very numerous, minute. "Native Tobacco-plant." **N. suaveolens.**

ANTHOCERCIS.

1595. Flowers rather large, in leafy panicles.

Tall, imperfectly beset with very short hairlets; leaves large, from elliptic to lanceolar, glabrescent; flowers few together or only two or sometimes solitary on each branch of the inflorescence; corolla whitish, its lobes acute, somewhat unequal; anthers almost one-celled; fruit globular-ovate, few-seeded. **A. Eadesii.**

Flowers very small, solitary.

Dwarf, beset with short glandule-bearing hairlets; leaves small, sessile, from oval to narrow-elliptical and broad-linear, often recurved at the margin; flowers on short stalklets; corolla whitish, its lobes obtuse, somewhat unequal; anthers almost one-celled; fruit globular-ovate, few-seeded. **A. myosotidea.**

PRIMULACEAE.

SAMOLUS.

1596. Leaves almost or quite membranous.

Leaves from roundish- to lanceolar-ovate; flowers quite small, in racemes; lobes of calyx deltoid, soon shorter than the tube; corolla tender, whitish or pink; filaments shorter than the corolla-tube; anthers minute, cordate; fruit small, globular, slightly emerged. **S. Valerandi.**

Leaves firm, somewhat succulent.

Leaves from narrow- to lanceolar-linear or the lower verging into an obovate form, the upper occasionally diminutive; flowers rather large, in racemes, or exceptionally quite solitary on a dwarf short- and broad-leaved state of the plant; lobes of calyx narrowly semilanceolar, longer than its tube; corolla firm, whitish or pink; anthers ovate, pointed; fruit ovate, half emerged. **S. repens.**

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LYSIMACHIA.

1597. Flowers in racemes, with yellow corolla.

Erect, tall; leaves scattered or ternately approximated, from elongate- to narrow-lanceolar, somewhat transparently dotted; racemes simple or compound; flowers rather large; lobes of the calyx margined; stamens slightly connected at the base; style thin, deciduous; fruit globular. **L. salicifolia.**

ANAGALLIS.

1598. Flowers minute, with whitish four-lobed corolla.

Annual, very small; leaves scattered, mostly lanceolar-ovate; flowers axillary, solitary, almost sessile; stamens four; fruit globular. (Possibly immigrated.)
A. Centunculus.

MYRSINACEAE.

MYRSINE.

1599. Leaves large, from elliptic- to lanceolar-obovate.

Arborescent, finally tall-arboreous; leaves occasionally somewhat denticulated; flowers on conspicuous stalklets, only some fruit-bearing; corolla greenish, its segments contiguous at the margin before expansion; anthers almost sessile; fruit quite small, globular. Figure 99.
M. variabilis.

EPACRIDEAE.

BRACHYLOMA.

1600. Sepals and corolla reddish.

Rather dwarf; leaves small, almost flat, from lanceolar- to broad-linear, pointed, minutely denticulated; flowers axillary, solitary, nearly sessile; sepals blunt, rather transparent; corolla-tube enclosed; lobes obtuse, inside somewhat beset with hairlets; fruit globular.
B. ericoides.

Sepals pale; corolla whitish 1601

1601. Leaves almost blunt.

Erect; leaves small, from oval- to lanceolar-elliptical, almost flat; flowers solitary, axillary or lateral; sepals minute; corolla-lobes acute, only slightly overlapping, inside hardly or scantily beset with hairlets; fruit small, globular. **B. daphnoides.**

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Leaves pungent-pointed 1602

1602. Leaves short-pointed.

Dwarf; leaves very small, flat, from ovate- to elliptic-lanceolar, minutely denticulated; flowers very small, axillary, solitary; corolla-lobes acute, inside hardly beset with hairlets; fruit minute. **B. ciliatum.**

Leaves long-pointed.

Diffuse; leaves small, mostly linear-lanceolar, soon spreading; flowers very small, axillary, solitary or crowded; sepals long-pointed, equal in length to the corolla-tube; corolla-lobes acute, inside beset with minute hairlets; fruit ovate, reddish outside. **B. depressum.**

STYPHELIA.

1603. Prostrate 1604

Erect or diffuse 1608

1604. Corolla always bright-red.

Leaves small, from narrow-lanceolar to almost linear, pungent, denticular-ciliolated; flowers solitary, axillary, nearly sessile; sepals comparatively large; corolla-tube elongated-cylindrical; corolla-lobes inside densely beset with short somewhat reddish hairlets; fruit rather large, ovate-globular, dark-greenish outside. **S. humifusa.**

Corolla never bright-red 1605

1605. Corolla inside or wholly white 1606

Corolla never white 1607

1606. Leaves minute.

Leaves crowded, from ovate- to broad-lanceolar, subtile-pointed, denticular-ciliolated, often recurved at the margin; flowers solitary or two together, axillary, almost sessile; corolla very small, its lobes inside densely beset with short white hairlets; fruit minute.

S. attenuata.

Leaves of rather conspicuous size.

Alpine or subalpine; leaves from oval- or lanceolar- to linear-elliptical, pungent-pointed, almost flat, slightly denticular-ciliolated, hardly spreading; flowers axillary, solitary, almost sessile; corolla-tube cylindrical, exserted; lobes inside densely beset with white hairlets; fruit ovate-ellipsoid, outside slightly succulent. **S. Fraseri.**

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1607. Corolla yellowish or pale-reddish, the lobes inside densely beset with hairlets.

Leaves mostly appressed and lanceolar, pungent-pointed, denticular-ciliolated, paler on the underside; flowers axillary, solitary, nearly sessile; sepals rather large, somewhat reddish; corolla-tube elongated, lobes also long, its hairlets lax and elongated; stamens much emerging; anthers long and narrow; fruit comparatively large, ovate-globular, outside greenish.

S. adscendens.

Corolla wholly green, the lobes only at the summit beset with hairlets.

Leaves small, spreading, from lanceolar- to broad-linear, pungent-pointed, almost flat, denticular-ciliolated; flowers quite small, in axillary or lateral or seldom terminal clusters; corolla-tube exserted; fruit globular, whitish outside. **S. serrulata.**

1608. Corolla-lobes inside beset with hairlets 1609

Corolla-lobes on both sides glabrous 1629

1609. Corolla white inside 1610

Corolla either red or yellowish and greenish ... 1628

1610. Corolla-lobes only at the summit beset with hairlets.

Maritime; leaves small, thick, from cordate-oval to narrow-elliptical, flat; flowers minute, in axillary or lateral clusters; fruit very small. **S. ovalifolia.**

Corolla-lobes inside completely beset with hairlets ... 1611

1611. Flowers solitary or two or rarely more together ... 1612

Flowers in spikes or clusters 1618

1612. Leaves mostly ovate or orbicular or cordate ... 1613

Leaves mostly linear or lanceolar 1615

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1613. Flowers on a recurved conspicuous stalk.

Desert-plant, always dwarf; leaves very small, appressed, from ovate- to narrow-elliptical, somewhat concave; flowers very small, solitary or two together, axillary; lobes of the corolla inside densely beset with white hairlets; fruit ellipsoid, bent downward. **S. Woodsii.**

Flowers almost sessile 1614

1614. Leaves towards the margin incurved.

Desert-plant; leaves often distant, from cordate- to lanceolar-ovate, pungent-pointed, minutely denticulated; flowers fragrant, solitary or two or three together, axillary; corolla whitish or occasionally somewhat reddish, its lobes inside densely beset with hairlets, its tube enclosed; fruit ellipsoid, outside greenish. **S. rufa.**

Leaves towards the margin recurved or flat.

Desert-plant; leaves short, very firm, divergent, from orbicular- to ovate-cordate, minutely pointed, without any denticulation; flowers small, solitary or two or few together, axillary; calyx slender; lobes of the corolla inside densely beset with white hairlets; tube enclosed; fruit ellipsoid-ovate, greenish outside. **S. cordifolia.**

1615. Leaves appressed.

Leaves mostly crowded and very short, from broad- to narrow-lanceolar, pungent-pointed, very concave, minutely denticulated; flowers quite small, solitary or two or three together, axillary; lobes of the corolla inside densely beset with white hairlets; tube enclosed; ovulary with five ovules. **S. appressa.**

Leaves spreading 1616

1616. Ovulary with two cells.

Leaves mostly scattered, rather long, almost flat, from broad- to narrow-lanceolar, pungent-pointed, minutely denticulated; flowers quite small; lobes of the corolla inside densely beset with white hairlets; tube enclosed; hypogynous disk or scalelets absent; ovulary with only two ovules; fruit small, ellipsoid, compressed, dry. **S. esquamata.**

Ovulary with more than two cells 1617

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1617. Flowers **nearly sessile.**

Leaves small, from elliptic-lanceolar to narrow-linear, pungent-pointed; sepals much pointed; corolla-tube cylindrical, lobes inside thinly beset with white hairlets; fruit very small, turgid-ovate, succulent, outside yellowish or orange-colored. **S. juniperina.**

Flowers **on a recurved stalk.**

Leaves quite small, from elliptic- to linear-lanceolar, pointed; flowers very small, solitary or two together; corolla-lobes inside densely beset with white hairlets; fruit as yet unknown. **S. biflora.**

1618. Flowers **in abbreviated spikes** 1619

Flowers **in elongated spikes** 1626

1619. Venules **of leaves five, prominent.**

Leaves quite small, thick, from cordate- to lanceolar-ovate, rather blunt, the lateral venules divergent; flowers small, crowded and mostly situated at the summit of the branches; corolla-lobes inside densely beset with white hairlets; fruit very small. **S. costata.**

Venules **of leaves faint** 1620

1620. Leaves **much twisted.**

Leaves quite small, mostly linear-lanceolar, slightly ciliolar-denticulated; flowers very small; lobes of the corolla inside densely beset with white hairlets; ovules two; fruit minute. **S. glacialis.**

Leaves **almost straight** 1621

1621. Leaves **along and towards the margin incurved.**

Leaves small, from narrow- to linear-lanceolar, gradually pointed; tube of the corolla enclosed, lobes inside densely beset with white hairlets; flowers very small; ovules five; fruit minute, dry. **S. virgata.**

Leaves **flat or along their margin recurved** 1622

1622. Leaves **nearly or quite flat** 1623

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Leaves distinctly recurved along the margin ... 1624

1623. Sepals long-pointed.

Leaves minute, from orbicular- to linear-elliptical, blunt; flowers quite small; lobes of the corolla inside densely beset with white hairlets; ovules two; fruit very small, dry, ellipsoid. **S. microphylla.**

Sepals blunt.

Alpine, tall; leaves small, mostly ovate, blunt; flowers very small; tube of the corolla enclosed, lobes inside densely beset with white hairlets; fruit globular, somewhat succulent, red outside. **S. Macraei.**

1624. Leaves blunt or hardly pointed.

Leaves rather or quite small, from oval- to linear-elliptical, occasionally flat; inflorescence mostly terminal; flowers very small, only exceptionally solitary or two together; lobes of the corolla inside densely beset with white hairlets; ovules two; fruit minute. **S. collina.**

Leaves distinctly pointed. 1625

1625. Inflorescence mostly axillary.

Leaves quite small, from elliptic- to broad-linear; flowers very small, occasionally only two or three together; lobes of the corolla inside densely beset with white hairlets; ovules five; fruit small, ellipsoid, sometimes curved. **S. ericoides.**

Inflorescence mostly terminal.

Leaves very small, mostly elliptic-lanceolar, often recurved also at the apex; flowers very small; lobes of the corolla inside densely beset with white hairlets; ovules three or four; fruit ellipsoid-ovate, angular. **S. thymifolia.**

1626. Flowers in interrupted spikes.

Tall; leaves flat, mostly lanceolar, longitudinally lined with strong venules; flowers very small; lobes of the corolla inside densely beset with white hairlets; fruit compressed, ovate, two-celled, outside red and succulent. **S. lanceolata.**

Flowers in dense spikes 1627

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1627. Leaves distinctly recurved along the margin.

Tall; leaves elongated, mostly narrow-lanceolar, longitudinally lined with strong venules; flowers very small; lobes of the corolla inside densely beset with white hairlets; fruit depressed-globular, five-celled, outside yellowish and succulent. **S. Australis.**

Leaves almost flat.

Maritime, tall, finally somewhat arborescent; leaves mostly elliptic-lanceolar, broader above the middle, longitudinally lined with strong venules; flowers very small; lobes of the corolla inside densely beset with white hairlets; fruit ovate-globular, equally turgid, normally five-celled, outside whitish and succulent. **S. Richei.**

1628. Corolla fiery-red.

Leaves rather small, from narrow-lanceolar to broad-linear, pungent-pointed, recurved at the margin, greyish beneath; flowers comparatively large, axillary, solitary, nearly sessile, exceptionally yellowish; sepals elongated, shining, reddish; corolla-lobes inside densely beset with hairlets; fruit comparatively large, globular- or ovate-ellipsoid, outside dark-green. Figure 110. **S. Sonderi.**

Corolla red towards the base, but from yellowish gradually green towards the summit.

Leaves crowded, narrow-linear, pungent-pointed, almost acicular, revolute at the margin, greyish beneath; flowers axillary, solitary, almost sessile; sepals comparatively large; corolla-tube long-cylindrical, much exserted, lobes imperfectly beset inside with hairlets; fruit rather large, almost globular, outside dark-green. **S. pinifolia.**

1629. Corolla pale-yellowish.

Leaves crowded, many appressed, from narrow- to linear-lanceolar, gradually pungent-pointed, concave, generally greyish-green; flowers rather large; corolla rarely reddish, its tube enclosed, its lobes rather long, occasionally beset with hairlets on the inner side; fruit nearly globular. **S. urceolata.**

Corolla white 1630

1630. Flowers solitary in the axils.

Often maritime, seldom arborescent; leaves very rigid and spreading, from lanceolar- to narrow-linear, pungent-

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pointed, recurved at the margin, greyish beneath; flowers axillary, often solitary, short-stalked; corolla-lobes glabrous or somewhat beset with short hairlets inside; fruit depressed-globular, red outside. **S. Oxycedrus.**

Flowers in clusters or spikes or racemes 1631

1631. Finally arborescent.

Chiefly maritime; leaves rather large, from ovate- to linear-elliptical, almost flat, greyish or whitish underneath; flowers minute, in short racemes or occasionally only two together or even solitary; perfect staminate and perfect pistillate flowers often on distinct plants; corolla white; ovule only one; fruit minute, ovate-ellipsoid, outside red or orange-colored. **S. elliptica.**

Low-shrubby 1632

1632. Fruit minute, one-celled.

Leaves small, from lanceolar- to elliptic-linear, pointed, somewhat or quite recurved along the margin, greyish or whitish underneath; flowers minute, few in each small axillary spike or cluster or occasionally only two together or even solitary; corolla white; ovule only one; fruit minute. **S. scoparia.**

Fruit of rather conspicuous size, five-celled 1633

1633. Leaves almost blunt.

Alpine; leaves small, from narrow- to linear-elliptical, somewhat recurved along the margin, beneath greyish; flowers quite small, in short mostly terminal spikes; corolla white, its lobes glabrous or sometimes inside beset with hairlets; stamens and the pistil often perfected only in distinct flowers; fruit globular, outside bright-red. **S. montana.**

Leaves pungent-pointed.

Leaves small, spreading, from broad- to narrow-linear; flowers rather small, in short racemes or occasionally only two together; corolla white or slightly reddish, its tube cylindrical, much longer than the lobes, the latter seldom beset with hairlets inside; fruit depressed-globular, succulent, outside pale-yellowish. **S. strigosa.**

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TROCHOCARPA.

1634. Fruit normally five-seeded, outside bright-red.

Alpine, prostrate; leaves generally minute and appressed, from oval- to narrow-elliptical, somewhat concave; flowers very small, solitary, almost sessile; tube of the corolla narrow; lobes densely beset with very short white hairlets inside; fruit small, globular, somewhat succulent. **T. Pumilio.**

Fruit normally ten-seeded, outside dark-bluish.

Alpine, dwarf; leaves small, spreading, from ovate- to lanceolar-elliptical, almost flat; spikes very short, few-flowered; tube of the corolla greenish, wide, the lobes purplish and glabrous upwards inside; fruit comparatively large, depressed-globular, pulpy, edible. **T. Clarkei.**

EPACRIS.

1635. Tube of the corolla much longer than the calyx ... 1636

Tube of the corolla about as long as the calyx ... 1637

1636. Tube of the corolla red, the lobes white.

Straggling; leaves small, spreading, from cordate to lanceolar-ovate, sharp-pointed; flowers bent downward, solitary, axillary; tube of the corolla very long, exceptionally white; style elongated; fruit small, almost globular. **E. longiflora.**

Corolla equal-colored, either red or white.

Slender, erect; branches generally few; leaves small, spreading, from ovate- to linear-lanceolar, sharp-pointed; flowers solitary or rarely two or exceptionally more together, axillary, somewhat bent downward, forming leafy rather unilateral spikes; corolla white or variously red, with five impressions near the base; style elongated; fruit small, almost globular. **E. impressa.**

1637. Leaves blunt 1638

Leaves pungent-pointed 1641

1638. Tube of the corolla conspicuously turgid.

Alpine, depressed; leaves minute, thick, mostly oval and appressed; flowers crowded near the summits of the

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branches; bracts and sepals blunt, the latter very short; corolla always white, its lobes obtuse; style abbreviated; fruit small, almost globular. **E. petrophila.**

Tube of the corolla almost cylindrical 1639

1639. Prostrate.

Leaves small, thick, from obovate to narrow-elliptical; flowers scattered along the branchlets; bracts and sepals blunt; corolla always white; style rather elongated; fruit small, almost globular. **E. crassifolia.**

Erect 1640

1640. Leaves from obovate to orbicular.

Rather tall; leaves small, spreading, thick; flowers crowded at and near the summit of branchlets; bracts and sepals blunt; corolla always white, the lobes obtuse; style rather elongated; fruit small, almost globular. **E. robusta.**

Leaves almost narrow-elliptical.

Rather tall and slender; branches few; leaves small, thick, appressed or hardly spreading; flowers fragrant, scattered along the branches, but forming leafy almost unilateral spikes; bracts and sepals nearly blunt; corolla always white; style rather elongated; fruit small, almost globular. **E. obtusifolia.**

1641. Leaves from linear to quite lanceolar 1642

Leaves from ovate to cordate 1643

1642. Bracts and sepals fringed with minute hairlets.

Tall, bushy, often litoral; leaves small, pointed, appressed or hardly spreading; flowers axillary, solitary, but crowded near the summit of branchlets; bracts and sepals acute; corolla always white, its tube narrow-cylindrical; style somewhat beset with hairlets; fruit small, ovate-globular. **E. lanuginosa.**

Bracts and sepals glabrous.

Tall, bushy, often alpine; leaves small, appressed or hardly spreading; flowers axillary, solitary, but crowded near the summits of branchlets; bracts and sepals acute; corolla always white, its tube narrow-cylindrical; style glabrous; fruit small, ovate-globular. **E. paludosa.**

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1643. Bracts and sepals blunt.

Rather tall; leaves small, spreading, rigid, mostly cordate and gradually sharp-pointed, curved inward; flowers short, axillary and solitary, but forming leafy spikes; corolla always white; style abbreviated; fruit small, almost globular. **E. microphylla.**

Bracts and sepals pointed 1644

1644. Leaves slightly pointed.

Alpine, rather dwarf; leaves quite small, often almost ovate, thick, nearly or quite flat; corolla always white; fruit small, almost globular. **E. serpillifolia.**

Leaves conspicuously pointed.

Alpine, tall, exceptionally arborescent; leaves small, from rhomboid- to lanceolar-ovate, generally somewhat concave; flowers axillary, solitary, crowded towards the summit of branchlets; corolla always white; style rather elongated; fruit small, almost globular. **E. heteronema.**

SPRENGELIA.

1645. Corolla pink, deeply cleft, about as long as the calyx.

Finally tall, often of intricate growth; branches tough; leaves rather small, cylindrically incurved towards the base, channelled-semilanceolar and divergent towards the pointed summit; flowers terminal, few together or two or one; sepals comparatively large, purplish; lobes of the corolla narrow, almost contiguous before expansion; stamens free from the corolla; anthers frequently beset with minute papillules, often coherent; fruit small, globular-ovate. **S. incarnata.**

RICHEA.

1646. Panicle spike-like, dense, with deciduous bracts and bracteoles, generally distant from the spreading leaves.

Alpine, shrubby, moderately tall; branches robust, tough; leaves rather large, very rigid, from a broad base semi-lanceolar, gradually much narrowed upwards; spikes terminal; corolla very short, whitish, separating by transverse basal fissure; stamens free from the corolla; fruit small, almost globular. **R. Gunnii.**

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ERICACEAE.

GAULTHERIA.

1647. Fruit-calyx carnulent, white.

Alpine or subalpine, erect, finally tall, much beset with somewhat reddish hairlets; leaves rather large, from elliptic- to narrow-lanceolar, serrulated; racemes mostly terminal; bracts small; corolla white; fruit comparatively large, depressed-globular. **G. hispida.**

WITTSTEINIA.

1648. Corolla green-yellowish.

Subalpine; leaves scattered, rather large, mostly from almost elliptic to ovate, somewhat distantly denticulated or indented, glabrous, paler beneath; flowers axillary, solitary or two together; lobes of the calyx conspicuous; corolla rather large, sometimes slightly reddish; stamens finally somewhat emerging; anthers longitudinally dehiscent; style elongated; ovulary two- or three-celled; fruit almost globular, greenish- or reddish-white outside; seeds few or several. Figure 109. **W. vacciniacea.**

CONVOLVULACEAE.

CUSCUTA.

1649. Stalklets shorter than the flowers.

Stems and branches thread-like, yellowish; flowers usually in clusters, almost without stalklets, glandular-dotted; corolla transparent, very turgid, contracted towards the summit, with five scale-like fringy ciliolated appendages below the stamens; styles two; stigmas blunt; fruit depressed-globular. "Dodder." **C. Australis.**

Stalklets longer than the flowers.

Stems and branches thread-like, yellowish; corolla transparent, almost bell-shaped, with five scale-like fringy ciliolated appendages below the stamens; styles two; stigmas blunt; fruit almost globular. "Dodder." **C. Tasmanica.**

CONVOLVULUS.

1650. Bracteoles minute, distant from the calyx.

Dwarf, but perennial, often beset with hairlets; leaves from cordate-arrowshaped to ovate-lanceolar or some linear, their basal lobes either diverging or obliterated; lateral lobes present or oftener absent; flowers rather small, axillary, solitary, conspicuously stalked; corolla pink or pale; fruit completely two-celled. **C. erubescens.**

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Bracteoles large, equalling or surpassing the calyx ... 1651

1651. Flowers rather small.

Sylvan, rather extensively climbing, often glabrous; leaves from lanceolar-arrowshaped and deltoid to narrow-lanceolar, the basal lobes diverging, acute; flowers axillary, solitary, on very angular stalks; bracteoles from ovate- to orbicular-cordate; corolla pink or pale; fruit incompletely two-celled. **C. marginatus.**

Flowers very large.

Riparian, widely climbing or trailing or on coast-land creepingly prostrate; sap copious, white; leaves large, from cordate- to ovate-arrowshaped, almost membranous, or on maritime plants renate and somewhat succulent, the basal lobes often angular; flowers axillary, solitary, long-stalked; bracteoles mostly lanceolar-ovate; corolla rosy red, pale-pink or quite white; fruit one-celled. **C. sepium.**

WILSONIA.

1652. Somewhat shrubby.

Restricted to saline ground, never tall, but much branched, thinly but closely beset with grey silky-shining vestiture, occasionally spinescent; leaves minute but thick, mostly crowded in two rows, sessile, from lanceolar- to orbicular-ovate, above concave; flowers very small, axillary, solitary, sessile; corolla-tube about as long as the calyx; fruit enclosed, globular-ovate. **W. humilis.**

Quite herbaceous 1653

1653. Corolla-tube about as long as the calyx.

Quite dwarf, somewhat invested with scattered hairlets; leaves minute, from orbicular to ovate, thick, rather flat; flowers very small, axillary, solitary, sessile; calyx outside beset with silk-like vestiture; fruit enclosed, ovate-globular. **W. rotundifolia.**

Corolla-tube conspicuously longer than the calyx.

Quite dwarf, almost glabrous; leaves from elliptic to broad-linear, somewhat succulent; flowers small, axillary, solitary, sessile; calyx without any outside vestiture; corolla whitish; stamens long-exserted; fruit enclosed, ovate-globular. **W. Backhousii.**

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CRESSA.

1654. Stamens much exserted.

Dwarf, densely beset with greyish mostly appressed hairlets; leaves firm, usually from ovate to lanceolar; flowers axillary, solitary, but often crowded at and towards the summit of branchlets, almost sessile; corolla quite small, whitish or somewhat pink; fruit nearly enclosed, almost globular. **C. Cretica.**

DICHONDRA.

1655. Stems generally rooting at the nodes.

Small weak herb, much beset with greyish often appressed vestiture; leaves usually scattered, on long stalks, from cordate- to renate-orbicular, entire; flowers very small, solitary, axillary, on conspicuous stalks; corolla yellowish-white, minute; fruitlets ovate-ellipsoid, rarely two-seeded. **D. repens.**

ASCLEPIADEAE.

SARCOSTEMMA.

1656. Branches robust, pale-green, evenly cylindrical.

Desert-plant, jointed-ramified, glabrous; flowers small, in lateral umbel-like fascicles, their stalklets rather short; corolla pale, deeply cleft, its segments blunt; gynostemium surrounded by an undivided disk; fruitlets dehiscent by a single longitudinal fissure; seeds much shorter than their tuft of hairlets. **S. Australe.**

TYLOPHORA.

1657. Corolla very small, dark-violet, beset with minute hairlets inside.

Sylvan plant; leaves from broad- to lanceolar-ovate, pointed, almost membranous, always glabrous; umbels axillary, solitary or two together, on slender stalks; gynostemium black-purplish outside; fruitlets much pointed, dehiscent by a single longitudinal fissure. **T. barbata.**

DAEMIA.

1658. Corolla dark-purplish, deeply cleft, conspicuously beset with soft hairlets inside.

Desert-plant; leaves linear, rather long, glabrous; umbels stalked, few-flowered, axillary; corolla-segments acute; gynostemium surrounded by a narrow almost undivided disk, terminated by five much pointed appendages; fruitlets dehiscent by a single longitudinal fissure; seeds shorter than their tuft of hairlets. Figure 102.

D. quinquepartita.

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MARSDENIA.

1659. Leaves narrow.

Desert-plant, greyish-green, often invested with minute hairlets; leaves elongate- and broadish-linear; flowers rather large, in simple axillary umbels; lobes of corolla glabrous, hardly as long as the tube; fruit very turgid, dehiscent by a single longitudinal fissure. "Doubah." **M. Leichardtiana.**

Leaves broad 1660

1660. Flowers in simple umbels.

Sylvan plant, comparatively robust; leaves on long stalks, from ovate to cordate-orbicular, pointed; flowers fragrant; corolla whitish with a green-yellowish tinge, its lobes blunt, inside imperfectly beset with short hairlets; fruit very turgid, dehiscent by a single longitudinal fissure. **M. rostrata.**

Flowers in compound cyme-like umbels.

Sylvan plant, often invested with minute hairlets; root producing tubers; leaves on short stalks, from oval- to lanceolar-elliptical; flowers quite small; corolla greenish-yellow, the lobes glabrous; fruit rather slender, dehiscent by a single longitudinal fissure. **M. flavescens.**

APOCYNEAE.

ALYXIA.

1661. Leaves from orbicular- to elliptic-obovate.

Mostly maritime, occasionally somewhat trailing, glabrous; leaves very firm, comparatively small, recurved at the margin, their lateral venules concealed; flowers small, terminal, few together, almost sessile, fragrant; corolla brownish- or reddish-yellow outside, whitish inside; stamens enclosed; fruitlets orange-colored outside, often one-seeded or occasionally with two to four seeds and constricted between them.

(Gynopogon buxifolius.) **A. buxifolia.**

LYONSIA.

1662. Leaves from ovate- to linear-lanceolar.

Sylvan, amply winding, robust; roots producing tubers; leaves very firm, comparatively long, greyish beneath;

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flowers small, in cymes, provided with a very thin vestiture; corolla yellowish inside, its lobes only at the base beset with hairlets; anthers exserted, coherent; fruitlets very slender, longitudinally connate, on the inner side by a single fissure dehiscent, the inflexed edges of their pericarp inserted on a membranous two-plated dissepiment. Figure 101. **L. straminea.**

ASPERIFOLIAE.

EHRETIA.

1663. Finally tall-arboreous.

Sylvan tree, with annually deciduous foliage; leaves from ovate- to lanceolar-elliptical, pointed, almost or quite glabrous, serrulated; flowers small, in panicles; stalklets very short; corolla whitish; stamens much exserted; fruit small, globular, reddish outside.

E. acuminata.

HALGANIA.

1664. Leaves rather thin, indented towards the summit.

Somewhat sticky, often bearing scattered rigid appressed hairlets and also a thin glandular vestiture; leaves from obovate- to linear-cuneate, somewhat conduplicated, wavy or crisped at the margin, occasionally truncated; flowers in cymous corymbs, sometimes only three or two together; corolla deep-blue, its lobes generally acute; fruit wrinkled.

H. cyanea.

Leaves thick, entire.

Desert-plant, rather sticky; leaves from elliptic- to narrow-lanceolar, recurved at the margin, beset beneath with a thin whitish velvet-like vestiture; flowers in small corymbs; corolla deep-blue; anthers viscid, outward dark and glabrous; fruit ovate-ellipsoid. Figure 106.

H. lavandulacea.

ROCHELIA.

1665. Calyx usually cleft into more than five segments.

Annual desert-plant, prostrate or ascending, beset with rigid hairlets; leaves linear, entire; flowers mostly extra-axillary, arranged in leafy racemes; calyx-segments narrow, flexuous; corolla minute, its lobes white; stamens often four only; fruitlets triangular-ovate, pointed.

R. Maccoya.

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CYNOGLOSSUM.

1666. Leaves from almost orbicular to nearly ovate.

Perennial forest-plant, flaccid, often elongated and straggling, granular-rough, scantily beset with very rigid hairlets; leaves rather thin, frequently inequilateral; flowers small, in leafy racemes or extra-axillarily scattered; stalklets elongated, soon recurved; corolla-lobes blue or white; asperities of fruitlets doubly hooked. **C. latifolium.**

Leaves from elliptic to narrow-lanceolar 1667

1667. Flowers in leafy racemes.

Perennial, rather dwarf, erect, slender, much beset with appressed somewhat rigid hairlets; lower leaves stalked, upper sessile; stalklets elongated, soon recurved; flowers intensely fragrant; corolla very small, its lobes white, its appendages bright-yellow; asperities of fruitlets doubly hooked. **C. suaveolens.**

Flowers in leafless racemes.

Perennial, rather tall, erect, comparatively robust, much beset with appressed somewhat rigid hairlets; leaves mostly stalked; stalklets of flowers abbreviated, the lowest sometimes axillary; flowers small, scented; corolla-lobes often blue, occasionally pink or white; asperities of fruitlets doubly hooked, those at the margin longest. **C. Australe.**

LAPPULA.

1668. Fruitlets at the margin beset with spinular processes, at the back impressed-hollowed and somewhat granular-rough.

Annual, dwarf, erect or ascending, somewhat beset with generally appressed hairlets; leaves from ovate- to linear-elliptical; flowers in leafy almost one-sided racemes, very small, on short stalklets; lobes of the corolla usually blue; margin of fruitlets prominent; spinular asperities rather few, somewhat barbed. **L. concava.**

ERITRICHUM.

1669. Lower leaves generally opposite.

Annual, dwarf, erect or ascending, somewhat beset with generally appressed yellowish or greyish hairlets; leaves quite small, from narrow-elliptical to broadish-linear, the upper scattered; flowers in one-sided spike-like foliaceous-bracteated racemes; corolla minute, its lobes white; fruitlets rather acute, reticular- and wrinkled-rough. **E. Australasicum.**

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MYOSOTIS.

1670. Stamens almost enclosed.

Beset with short hairlets; stem rather short and quite thin; leaves from obovate- to lanceolar- or linear-elliptical; stalklets very short; bracts none; flowers very small, all turned to one side; hairlets of the calyx hooked; lobes of corolla white or blue; fruit enclosed.

M. Australis.

Stamens much exserted.

Perennial, sylvan, beset with rather rigid hairlets; stem rather tall and robust; leaves from elliptical to narrow-lanceolar, rather elongated, usually sessile or somewhat decurrent; stalklets short; bracts none; flowers relatively large, fragrant; hairlets of the calyx hooked; lobes of corolla oftener white than bluish; fruit enclosed.

M. suaveolens.

HELIOTROPIUM.

1671. Glabrous.

Prostrate, grey-greenish, somewhat succulent; leaves from oval to almost linear; lateral venules concealed; spikes usually two together; flowers small, all turned to one side; lobes of the corolla white; bracts none; stigma depressed; fruit very short and broadish.

H. Curassavicum.

Beset with hairlets 1672

1672. Vestiture consisting of short and mostly appressed hairlets.

Erect or ascending; leaves conspicuously stalked, rather smooth, entire, from elliptic- to lanceolar-ovate; spikes usually two together; bracts none; flowers very small, all turned to one side; lobes of the corolla white; stigma elongate-conical; fruit wrinkled-rough.

H. Europaeum.

Vestiture consisting of elongated rigid and mostly spreading hairlets.

Desert-plant, erect or ascending; leaves from elliptic to almost lanceolar, mostly sessile, waved and recurved at the margin; spikes usually two together; flowers closely approximated, all turned to one side; lobes of the corolla white; stigma slender-conical. **H. asperrimum.**

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LABIATAE.

SALVIA.

1673. Flowers almost minute, supported by very small bracts or floral leaves.

Herbaceous, much beset with short hairlets; leaves all stalked, from lanceolar to elliptical, irregularly crenulated, wrinkled above; whorls of flowers distinct; denticles of the calyx blunt; corolla slightly exserted, pale-purplish; fruitlets minute, ellipsoid. **S. plebeja.**

BRUNELLA.

1674. Inflorescence terminal, short, almost cylindrical, with roundish somewhat purplish bracts.

Never tall, somewhat beset with hairlets; leaves from elliptical- to lanceolar-ovate, distantly indented or almost entire, only the uppermost sessile; bracts from cordate to renate-orbicular, pointed, ciliolated; flowers small; upper side of the calyx truncate and minutely denticulated at the summit; corolla violet; fruitlets very small, triangular-ellipsoid.

(Prunella vulgaris.) **B. vulgaris.**

PLECTRANTHUS.

675. Leaves long-stalked, from cordate- to ovate-orbicular, crenular-indented.

Usually rather tall; stem slightly pellucid; leaves wrinkled above, occasionally assuming a somewhat purplish hue; inflorescence leafless, consisting of distinct whorls; bracts fugacious; corolla pure-blue, semiemergent, its lowest lobe enlarged, concave; two of the stamens somewhat longer than the corolla; fruitlets smooth.

P. parviflorus.

LYCOPUS.

1676. Leaves from broad- to narrow-lanceolar, serrated.

Swamp-plant, rather tall, scantily beset with minute rigid hairlets; leaves comparatively long, but on short stalks or almost sessile, their denticles somewhat distant; flowers quite small, their stalks and stalklets almost absent; bracts short, narrow, pointed; corolla whitish, usually but little emerging; fruitlets smooth, somewhat turgidly margined. **L. Australis.**

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WESTRINGIA.

1677. Corolla violet.

Forest-plant, nearly glabrous; leaves generally three in a whorl, from ovate- to lanceolar-elliptical, almost flat; bracteoles much shorter than the calyx; lobes of the calyx about as long as the tube; corolla beset with minute hairlets outside. **W. glabra.**

Corolla white 1678

1678. Leaves generally three in a whorl 1679

Leaves generally four or six in a whorl 1680

1679. Leaves elongated.

Riparian plant, imperfectly beset with minute hairlets; leaves linear, somewhat recurved at the margin, nearly glabrous beneath; lobes of the calyx rather shorter than the tube. **W. longifolia.**

Leaves abbreviated.

Desert-plant, much beset with minute hairlets; leaves mostly linear-lanceolar, somewhat pungent, refracted at the margin; lobes of the calyx considerably shorter than the tube. **W. rigida.**

1680. Leaves generally four in a whorl.

Coast-plant; leaves from elliptic- to linear-lanceolar, recurved at the margin, beset with a close white rather shining vestiture underneath; lobes of the calyx nearly as long as the tube; corolla outside beset with appressed hairlets. **W. rosmariniformis.**

Leaves generally six in a whorl.

Highland-plant, much beset with rather long whitish hairlets; leaves mostly lanceolate-linear, revolute at the margin; lobes of the calyx about as long as the tube. **W. senifolia.**

MENTHA.

1681. Tall, erect 1682

Dwarf, diffuse 1683

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1682. Leaves almost ovate, much indented.

Sylvan; leaves rather large; flowers numerous in each whorl, on conspicuous stalklets; lobes of the calyx semi-lanceolar; corolla much longer than the calyx, often lilac-colored; upper portion of stamens generally exserted. **M. laxiflora.**

Leaves almost lanceolar, entire or scantily indented.

Often riparian; flowers numerous in each whorl, on very short stalklets; lobes of the calyx narrow; corolla somewhat longer than the calyx, lilac-colored or white; upper portion of stamens generally exserted. **M. Australis.**

1683. Leaves rather small, lanceolar-ovate.

Often in valleys, rather dwarf; leaves almost entire, on rather conspicuous stalks; flowers small, rather few in each whorl, on very short stalklets; lobes of the calyx quite short; corolla hardly exceeding the calyx, often lilac-colored; stamens generally quite enclosed. **M. gracilis.**

Leaves very small, from oval to narrow-elliptical.

Often on ridges, very dwarf; leaves entire, almost sessile; flowers small, few in each whorl, on very short stalklets; lobes of the calyx quite short, densely beset with minute hairlets inside; corolla hardly longer than the calyx, lilac-colored or white; stamens generally quite enclosed. **M. saturejoides.**

AJUGA.

1684. Flowers more than one in each axil, with upwards pure-blue corolla.

Perennial, usually branchless, variously beset with soft hairlets; lower leaves from obovate to lanceolar- or narrow-elliptical, often sinuously indented; floral leaves narrower, sessile, gradually entire, mostly longer than the whorls; flower-stalks and stalklets hardly developed; lobes of the calyx generally shorter than its tube; corolla rarely pink or white, its lowest lobe the longest; fruitlets reticular- and faveolar-rough. **A. Australis.**

TEUCRIUM.

1685. Flowers nearly sessile.

Always dwarf, but perennial; somewhat beset with short hairlets and with copious glandules; leaves in outline from rhomboid- to linear-cuneate, three- to five-lobed, recurved at the margin, the lobes entire or cleft again; floral leaves bractlike-shortened, slightly indented; flowers small, in dense short somewhat leafy spikes; corolla short-exserted. **T. sessiliflorum.**

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Flowers stalked 1686

1686. Beset with somewhat scattered short hairlets.

Perennial, usually rather tall; leaves from nearly ovate to broad-lanceolar, indented or somewhat lobed, wrinkled, the floral leaves gradually diminished in size; flowers in stalked opposite cymes, thence arranged in leafy panicles; corolla white; fruitlets invested with minute hairlets.

T. corymbosum.

Beset with whitish closely approximated minute hairlets.

Principally a desert-plant, perennial, usually rather dwarf; leaves mostly small, from elliptic- to linear-lanceolar, entire or slightly denticulated or exceptionally three-lobed, occasionally crisped; flowers often solitary in the axils, on rather elongated stalks, forming generally a simple partly leafless raceme; stalklets elongated; corolla white; fruitlets thinly invested with hairlets.

T. racemosum.

SCUTELLARIA.

1687. Rather tall, often beset with soft hairlets.

Perennial; leaves comparatively long, mostly from ovate- to lanceolar-elliptical; flowers axillary, solitary, all turned to one side, their supporting leaves gradually smaller; upper lobe of the calyx deciduous; corolla relatively large, upwards blue, its lower lobes conspicuously longer than the upper, its tube rather short; fruitlets enclosed.

S. mollis.

Rather dwarf, often almost glabrous.

Perennial; leaves comparatively short, mostly from cordate. to orbicular-ovate; flowers axillary, solitary, all turned to one side; upper lobe of the calyx deciduous; corolla relatively small, upwards blue, its lower lobes slightly longer than the upper, its tube quite short; fruitlets enclosed.

S. humilis.

PROSTANTHERA.

1688. Corolla bright-red.

Desert-plant, never tall, beset with very short but rigid hairlets; leaves very small, from oval- to linear-elliptical, slightly recurved towards the apex, often somewhat crowded into axillary fascicles; flowers axillary, on conspicuous stalklets; calyx rather elongated; upper division of the corolla longer than the lower, its orifice spotted with blackish dots; anther-appendages hardly longer than the cells.

P. coccinea.

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Corolla white or green or blue or lilac-colored ... 1689

1689. Corolla greenish 1690

Corolla white or bluish or lilac-colored 1691

1690. Corolla streakless.

Desert-plant, never tall, beset with short but rigid hairlets; leaves very small, from rhomboid- to elliptic-ovate, somewhat recurved at the margin; flowers axillary, on conspicuous stalklets; calyx rather elongated, open when fruit-bearing; upper division of the corolla longer than the lower; anther-appendages shorter than the cells.

P. chlorantha.

Corolla violet-streaked.

Rather tall, partially beset with short hairlets; leaves rather small, from rhomboid- to elliptic-oval, entire or scantily denticulated, recurved at the margin; flowers quite large, singly axillary, on conspicuous stalklets; upper division of the corolla somewhat longer than the lower; lateral lower lobes semilanceolar, pointed; anther-appendages shorter than the cells. **P. Walteri.**

1691. Corolla upwards blue- or lilac-colored 1692

Corolla nearly or quite white 1699

1692. Thorny.

Never tall, branchlets acicular-spinescent; leaves quite small, from orbicular- to lanceolar-ovate, almost entire and glabrous; flowers all singly axillary, on conspicuous stalklets; corolla spotted towards its orifice with brownish-yellow dots, upwards lilac-colored; one of the anther-appendages much longer than the cells. Figure 107.

P. spinosa.

Thornless 1693

1693. Leaves comparatively long.

Tall; leaves rather large, flat, flaccid, mostly rhomboid-ovate, remotely indented, almost glabrous; flowers in terminal racemes or some axillary; lobes of the calyx of about equal length; corolla lilac- or somewhat violet-colored; anther-appendages hardly longer than the cells.

P. melissifolia.

Leaves comparatively short 1694

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1694. Leaves deeply indented.

Tall; leaves flat, from elliptic- to lanceolar-ovate, scantily indented; flowers in terminal racemes or the lower axillary; lower calyx-lobe longer than the upper; corolla lilac- or somewhat violet-colored; anther-appendages about as long as the cells. **P. incisa.**

Leaves entire or shortly indented 1695

1695. Leaves from rhomboid- to ovate-orbicular 1696

Leaves from lanceolar- to linear-elliptical 1697

1696. Leaves hardly or slightly indented, evidently stalked.

Tall, mainly sylvan, often beset with minute hairlets; leaves rather small, usually of somewhat thick texture, slightly indented or almost entire; flowers in part singly axillary, forming short partly leafy racemes; corolla lilac-colored; anther-appendages hardly longer than the cells. **P. rotundifolia.**

Leaves distinctly indented, almost sessile.

Never tall, much beset with short spreading hairlets; leaves quite small, occasionally minute, generally recurved along the margin, wrinkled above; flowers in terminal corymbous racemes, rather small; lower lobe of the calyx narrower; corolla-lobes lilac-colored, the orifice dark-violet or rarely the whole corolla white; anther-appendages hardly longer than the cells. **P. violacea.**

1697. Corolla upwards deep-blue.

Dwarf, beset with appressed hairlets; leaves quite small, from linear- to narrow-elliptical, blunt, flat or slightly recurved at the margin, equally green on both sides; flowers all singly axillary; lower lobes of the corolla much longer than the upper, orifice spotted with brown-yellow dots; one of the anther-appendages somewhat longer than the cells. **P. debilis.**

Corolla upwards lilac-colored 1698

1698. Leaves rather small, the bract-like floral leaves blunt.

Beset with short rigid hairlets; leaves never large, firm, from ovate- to lanceolar- and narrow-elliptical, revolute at the margin, paler green beneath; flowers in somewhat leafy interrupted racemes; corolla towards the orifice spotted with dark-purplish dots; anther-appendages hardly longer than the cells. **P. hirtula.**

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Leaves quite small, the bract-like floral leaves pointed.

Never tall, somewhat beset with short hairlets; leaves almost sessile, from ovate- to linear-lanceolar, often broadest towards the base and rough above, entire, recurved at the margin, some fascicular-crowded at the axils; flowers in somewhat leafy interrupted racemes; corolla towards the orifice violet; one of the anther-appendages somewhat longer than the cells.

P. denticulata.

1699. **Leaves comparatively long** 1700

Leaves comparatively short 1701

1700. **Leaves from ovate- to elongate-lanceolar, serrulated.**

Mainly sylvan, finally arborescent, with even a tall and stout trunk; leaves large, but usually of thin texture, glabrous, mostly flat or occasionally somewhat recurved at the margin; flowers in often paniculated leafless racemes; corolla beset with minute hairlets, towards the orifice spotted with purplish dots; one of the anther-appendages much longer than the cells.

P. lasiantha.

Leaves broad-linear, entire.

Tall, generally glabrous; leaves somewhat incurved at the margin, equally green on both sides; flowers rather large, solitary in each axil; upper lobe of the calyx much larger than the lower; corolla spotted towards the orifice with brownish- or greenish-yellow dots; one of the anther-appendages conspicuously longer than the cells.

P. nivea.

1701. **Leaves from orbicular- to obovate-cuneate, almost entire.**

Alpine, somewhat beset with short hairlets; leaves rather small, of thick texture, mostly flat; flowers axillary, but forming leafy racemes; calyx deeply lobed; corolla towards the orifice spotted with purplish dots; one of the anther-appendages much longer than the cells.

P. cuneata.

Leaves from oval- to linear-elliptical 1702

1702. **Leaves incurved along the margin or flat** 1703

Leaves recurved along the margin 1704

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1703. Lobes of the calyx nearly equal in length.

Rather dwarf, somewhat invested with appressed hairlets; leaves very small, but firm, from elliptical to broad-linear; flowers axillary, on very short stalklets; calyx quite small; corolla outside beset with short hairlets; one of the anther-appendages somewhat longer than the cells. **P. saxicola.**

Upper lobe of the calyx considerably longer than the lower.

Finally tall, much invested with whitish appressed hairlets; leaves rather small, of thick texture, from oval- to linear-elliptical, entire; flowers singly axillary; corolla outside beset with short hairlets; one of the anther-appendages much longer than the cells. **P. Behriana.**

1704. Leaves rather small, the marginal curvature leaving below an open space.

Sub-alpine, rather tall; leaves of thick texture, from narrow- to linear-elliptical, often beset with minute hairlets; flowers axillary, hardly surpassing the supporting leaves; corolla white, towards the orifice spotted with yellowish dots; one of the anther-appendages somewhat longer than the cells. **P. phylicifolia.**

Leaves minute, through marginal curvature cylindrical.

Sub-alpine, seldom tall, somewhat beset with short rigid hairlets; leaves firm, crowded and spreading into four rows, very slender; flowers quite small, but surpassing the supporting leaves, singly axillary; anther-appendages about as long as the cells. **P. decussata.**

OROBANCHEAE.

OROBANCHE.

1705. Stamens inserted near the middle of the corolla-tube.

Annual or of short duration beyond a year, robust but never tall; base of stem turgid; bracts ovate, pointed, about half as long as the flowers, powdery-rough, venular-streaked; venules of sepals few; corolla rather large, curved downward, short-lobed, beset with minute glandular hairlets; anthers pointed; style glabrous; fruit longitudinally dehiscent.

(O. cernua.) **O. Australiana.**

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LENTIBULARINAE.

UTRICULARIA.

1706. Leaves submerged, repeatedly divided into capillary segments.

Floating, branched; leaves distantly beset with numerous minute roundish vesicular pitchers; flowers in racemes; corolla yellow; style very short; fruits on thickened and reflexed stalklets. **U. flexuosa.**

Leaves all radical, usually minute 1707

1707. Flowers few or several, terminal.

Stem often rather tall, always branchless; leaves from ovate to almost linear, seldom conspicuously elongated; pitchers few; flowers rather large, opposite or ternate, in one or two or few sets, but occasionally one or two flowers constituting the whole inflorescence; corolla generally violet-colored; fruit globular. **U. dichotoma.**

Flowers two or few, lateral.

Dwarf, branchless; stem exceedingly thin; leaves almost ovate; pitchers very few; flowers very small, distant along the stem, purplish, almost sessile, exceptionally one only developed; fruits minute. **U. lateriflora.**

POLYPOMPHOLYX.

1708. Quite dwarf, with very small flowers.

Leaves very short, from elliptical and lanceolar to linear, cuneate at the base; flowers three or two or one; corolla rose-red, but orange-colored and yellow at the orifice; its basal elongation conical, reaching the ends of the lower lobes; style hardly developed; fruit globular. Figure 105. **P. tenella.**

GESNERIACEAE.

FIELDIA.

1709. Fruit pulpy, whitish outside.

Epiphyte, chiefly on fern-trees; stem and main-branches somewhat woody; leaves flaccid, mostly from ovate- to narrow-lanceolar, serrate except towards the base, much beset with soft brownish or finally greyish hairlets, alternately smaller and larger, the smaller occasionally quite undeveloped; flowers large, axillary, solitary, from

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conspicuous stalklets pendent, almost unilaterally supported by two partially connate upwards narrowed bracteoles; corolla greenish- or yellowish-white, somewhat transparent, its tube broad-cylindrical, slightly inflated, many times longer than the roundish hardly unequal lobes; fertile stamens about as long as the corolla, fixed to its base, the fifth stamen rudimentary; anthers disconnected, cordate-roundish; style elongated; disk annular, adnate; fruit rather large; placentaries two-plated; seeds brown outside. **F. Australis.**

SCROPHULARINAE.

LIMOSELLA.

1710. Flowers sessile.

Leaves comparatively large, nearly always ovate, occasionally on very long stalks; lobes of the calyx remaining much shorter than the tube; corolla quite enclosed, greenish-white; filaments particularly short; fruit relatively of conspicuous size, indehiscent or very tardily bursting; seeds furrowed, dark-brown outside. **L. Curdieana.**

Flowers on conspicuous stalklets.

Leaves comparatively small, from oval and spatular to linear; lobes of the calyx soon as long as the tube; corolla partly exserted, white or rosy-red; stamens rarely two; fruit very small, but somewhat exserted, two-valved; seeds minute. **L. aquatica.**

GLOSSOSTIGMA.

1711. Stalklets of flowers usually exceeding the leaves.

Quite glabrous, rooting at the nodes; leaves minute, from narrow-elliptical to almost linear; calyx often three-lobed; corolla very short, white, its lobes without any ciliolation; stamens four, generally reaching the end of the corolla-lobes; fruit minute, globular, enclosed, two-valved. **G. Drummondi.**

Stalklets of flowers usually exceeded by the leaves.

Rooting at the nodes, intricately ramified, depressed; leaves very small, on stalks of moderate length, from spatular- to narrow-elliptical; calyx often four-lobed; corolla pale-bluish, its lobes fringy ciliolated; stamens four, generally much shorter than the corolla-lobes; ripe fruit unknown. **G. elatinoides.**

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EUPHRASIA.

1712. Perennial.

Somewhat beset with short hairlets; leaves firm, sessile, deeply serrated or short-indented at least towards the summit; flowers relatively large, several or many in each spike, supported by floral leaves; corolla upwards violet or lilac or white, but the ample orifice often yellowish; anthers black, often amply beset with minute white hairlets, the cells downwards minutely and equally appendicular-pointed; fruit somewhat exserted, almost ellipsoid, two-valved, many-seeded. **E. Brownii.**

Annual **1713**

1713. Corolla upwards yellow.

Sometimes biennial; copiously beset with short glandule-bearing hairlets; leaves sessile, often incised, the lobes rather acute; flowers relatively large, several or many in each spike, supported by floral leaves; corolla-lobes rather short in proportion to the tube; anthers somewhat beset with minute hairlets, the cells downwards minutely and equally appendicular-pointed; fruit about as long as the calyx, almost ellipsoid, two-valved, many-seeded. **E. scabra.**

Corolla upwards white.

Dwarf but erect, beset with short glandule-bearing hairlets; leaves sessile, incised or pinnatifid, the lobes narrow, blunt; spikes few-flowered; lobes of the calyx obtuse; corolla-lobes streaked with dark-purplish lines; orifice yellowish; anthers scantily beset with minute hairlets, the cells downwards minutely and equally appendicular-pointed; fruit orbicular-ovate, enclosed, two-valved, much compressed, few-seeded. **E. antarctica.**

MAZUS.

1714. Leaves from obovate to cuneate-elliptical.

Dwarf but perennial; leaves mostly basal, irregularly denticulated, rarely quite entire; flowers several or few in each raceme or occasionally reduced to two or one; stalklets rather long, soon recurved; bracts minute or undeveloped; corolla upwards almost violet-colored; fruit enclosed, two-valved. **M. pumilio.**

MIMULUS.

1715. Erect.

Glabrous, never tall; leaves small, from lanceolar- to linear-elliptical, sessile, entire or occasionally scantily

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denticulated; flowers on long stalklets; calyx prominently angular; corolla usually upwards blue, at the orifice beset with minute white hairlets; fruit almost ellipsoid, enclosed, two-valved. **M. gracilis.**

Prostrate 1716

1716. Glabrous.

Leaves quite small, somewhat succulent, from orbicular- to elliptical-ovate, sessile, entire; flowers on short stalklets, axillary, solitary; angles of the calyx blunt; corolla upwards lilac- or violet-colored, at the orifice yellow and dotted and there beset with minute hairlets; fruit almost globular, enclosed, tardily two-valved. **M. repens.**

Beset with minute hairlets.

Leaves very small, from narrow- to linear-elliptical, sessile, entire; flowers small, on rather long stalklets; corolla upwards bluish, its tube semiexserted and remarkably slender, the orifice yellowish; fruit almost ellipsoid, two-valved. **M. prostratus.**

STEMODIA.

1717. Placentaries connate, interposed to the inflexed margins of the fruit-valves.

Erect perennial desert-plant; leaves oftener simply opposite than ternately whorled, never large, from lanceolar to broad-linear, entire or somewhat denticulated; calyx divided to near the base into narrow almost equal segments; flowers solitary, supported by short and narrow bracteoles; corolla upwards bluish, its tube rather slender; fruit almost ovate-ellipsoid, four-valved.
S. Morgania.

GRATIOLA.

1718. Flowers on elongated stalklets.

Usually erect, beset with short glandule-bearing hairlets; leaves from almost elliptic- to narrow-lanceolar, sessile, somewhat denticulated or some entire; flowers axillary, solitary, supported by narrow bracteoles; corolla upwards pale-pink; staminodia absent; fruit ovate-globular, four-valved. **G. pedunculata.**

Flowers almost sessile 1719

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1719. **Leaves rather large, mostly serrated.**

Ascending or erect, generally riparian, often glabrous, of particularly bitter taste; leaves from orbicular to lanceolar-ovate, sessile; flowers axillary, solitary, supported by narrow bracteoles; corolla upwards pale-pink; staminodia present; fruit ovate-globular, four-valved.
G. Peruviana.

Leaves quite small, hardly denticulated.

Dwarf, often creeping, beset with very short hairlets or glabrous; leaves from obovate- to cuneate-elliptical, sessile; flowers quite small, axillary, solitary, supported by narrow bracteoles; corolla upwards pale-pink; staminodia present; fruit globular-ovate, four-valved.
G. nana.

VERONICA.

1720. **Annual.**

Usually erect, never tall; leaves quite small, from obovate- to linear-elliptical, almost without denticulations, mostly sessile; flowers very small, in leafy spike-like racemes; calyx four-cleft; corolla bluish or almost white; fruit obcordate, compressed against the dissepiment. (Probably immigrated.)
V. peregrina.

Perennial **1721**

1721. **Herbaceous** **1722**

Somewhat shrubby **1729**

1722. **Flowers nearly all singly terminal.**

Alpine, very dwarf, amply tufted; leaves quite small, of thick texture, crowded into four rows, sessile, mostly ovate, concave, entire; flowers sessile; calyx five-cleft; corolla pink, its tube rather long, lobes sometimes five; fruit obcordate, compressed parallel to the dissepiment. Figure 104.
V. densifolia.

Flowers in bracteate or leafy racemes **1723**

1723. **Leaves nearly or quite entire** **1724**

Leaves indented or pinnatisected **1725**

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1724. Leaves from lanceolar- to broad-linear.

Rather dwarf and flaccid, slender, nearly glabrous, scarcely branched; leaves entire or seldom somewhat indented; flowers few, in partly terminal racemes or some solitary; stalks thread-like, occasionally much elongated; stalklets rather long; calyx four-cleft; corolla blue; fruit from obcordate to almost renate, compressed against the dissepiment. **V. gracilis.**

Leaves from obovate to elliptical.

Here alpine, never tall, ascendant; leaves small, firm, the lower occasionally orbicular, the floral leaves somewhat lanceolar, scattered, the upper changed into bracts; racemes comparatively long; flowers very small; calyx four-cleft; corolla generally white with bluish venules; fruit obcordate- or renate-orbicular, compressed against the dissepiment. **V. serpillifolia.**

1725. Leaves pinnatisected.

Alpine, robust, nearly glabrous; leaves carnulent, shining, their segments linear, from entire to pinnatifid; flowers in rather long racemes; calyx five-cleft; corolla small, white or bluish; fruit obcordate, compressed against the dissepiment. **V. nivea.**

Leaves indented 1726

1726. Leaves and racemes comparatively long.

Lax forest-plant; stems elongated, ascending, often partly creeping; leaves flaccid, stalked, from ovate- to elongate-lanceolar, serrated; racemes mostly axillary, generally many-flowered; stalklets rather long; calyx four-cleft; corolla small, pale, streaked by lilac venules; fruit almost obcordate, compressed against the dissepiment. **V. notabilis.**

Leaves and racemes comparatively short 1727

1727. Fruit almost orbicular.

Stem slender, often elongated, beset with minute hairlets; leaves flaccid, from cordate- and deltoid- to orbicular-ovate; racemes seldom much elongated; calyx four-cleft; corolla small; fruit compressed against the dissepiment. **V. plebeja.**

Fruit almost obcordate 1728

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1728. Corolla relatively small, bluish.

Creeping or short-tufty, often conspicuously beset with hairlets; leaves from cordate- to deltoid- or rhomboid-ovate or the upper more lanceolar, indented, wrinkled above; racemes axillary, few-flowered; calyx comparatively large, four-cleft; corolla hardly exserted; fruit compressed against the dissepiment. **V. calycina.**

Corolla relatively large, white.

Chiefly a coast-plant, creeping, dwarf, beset with recurved short hairlets; leaves firm, almost sessile, somewhat rough, from deltoid- to elliptic-ovate, distantly indented; racemes corymbous, axillary; calyx small, four-cleft; corolla bluish-streaked, partly exserted; fruit compressed against the dissepiment. **V. distans.**

1729. Leaves entire, mostly connate at the base, never much elongated.

Tall, quite glabrous; leaves firm, greyish-green, from ovate- to lanceolar-deltoid, occasionally disconnected and then clasping, rarely indented, exceptionally ternate-whorled; flowers in elongated racemes; calyx four-cleft; corolla blue, purplish-streaked; fruit almost oval, compressed parallel to the dissepiment. **V. perfoliata.**

Leaves serrulated, sessile, elongated.

Chiefly riparian, quite tall, often nearly glabrous; leaves from ovate- to narrow-lanceolar, gradually pointed; flowers in much elongated partly terminal racemes; stalklets short; calyx small, four-cleft; corolla white or blue; fruit almost oval, compressed parallel to the dissepiment. **V. Derwentia.**

BIGNONIACEAE.

TECOMA.

1730. Calyx relatively small, minutely denticulated.

Tall-climbing and twining, mostly sylvan; leaflets generally in three to five pairs, the terminal leaflet solitary, all firm, from ovate- to narrow-lanceolar, often entire, glabrous, shining above, or in desert-plants without lustre, less firm and narrower; rachis of the leaves dilated; flowers in axillary panicles, moderately large; corolla whitish, upwards slightly pink, its tube almost cylindrical, much longer than the lobes, its orifice marked by dark-purplish dots and spots; fruit rather large, almost ellipsoid; pericarp hard; seeds of conspicuous size, flat. **T. Australis.**

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VERBENACEAE.

AVICENNIA.

1731. Lobes of the corolla above glabrous.

Tall shrub, finally arborescent; leaves from ovate- to narrow-lanceolar, of very thick texture, very pale beneath; flowers capitular-crowded, on robust stalks; corolla firm, its lobes ovate-lanceolar, reddish-yellow above; stigmas sessile; fruit from ellipsoid- to roundish-ovate, from a very thin vestiture greyish outside; seed solitary, soon free from its integument, germinating before dropping. **A. officinalis.**

CHLOANTHES.

1732. Leaves decurrent on the branchlets, much wrinkled above, recurved along the margin.

Finally rather tall, invested with crisped hairlets; leaves simply opposite, of soft texture, from lanceolar- to broad-linear, rough above; flowers solitary, mostly axillary, on very short stalklets; calyx deeply cleft; corolla bluish, dark-dotted, its tube comparatively short but rather wide, orifice beset with conspicuous hairlets; fruit turgid, tardily seceding into halves, with a cavity between the cells. **C. parviflora.**

VERBENA.

1733. Spikes extremely slender.

Perennial, erect, imperfectly beset with appressed minute but rigid hairlets; lower leaves mostly cuneate-obovate, irregularly indented; upper leaves from rhomboid to lanceolar in outline, incised or pinnatilobed and also partly indented; spikes soon elongated; bracts minute; flowers quite small; calyx denticulated; corolla upwards pale-pink or lilac-colored, the lobes through the union of the two upper almost equal; stamens four, enclosed; fruitlets dry. "Vervain." **V. officinalis.**

MYOPORINAE.

MYOPORUM.

1734. Fruit very turgid, three- or more-celled 1735

Fruit quite compressed, two-celled 1740

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1735. Dwarf, sometimes prostrate.

Branchlets often glandular-rough; leaves from narrow-elliptical to cuneate- or broad-linear, usually obtuse, entire or oftener bluntly denticulated, sometimes rather succulent; flowers solitary or two or three together, on generally long stalklets; fruit small, nearly globular, three- to four-celled. **M. humile.**

Tall, sometimes arborescent **1736**

1736. Leaves denticulated **1737**

Leaves quite entire **1738**

1737. Leaves of thick texture, often succulent.

Chiefly a coast-species, finally arborescent, occasionally quite a tall tree; leaves from broad- to narrow-lanceolar, of thick texture and somewhat carnulent, bluntly and rather distantly denticulated; fruit globular, three- or four-celled, the outer portion succulent, externally purplish-blue. **M. insulare.**

Leaves of thin texture, never succulent.

Never very tall; branchlets glandular-rough; leaves from orbicular-ovate to broad-lanceolar, usually rather short, thinly stalked, closely serrulated; flowers axillary, few or several together; fruit small, ovate-globular, almost dry, often three-celled. **M. viscosum.**

1738. Fruit yellowish outside.

A desert-species, seldom very tall; leaves very firm, from lanceolar- to broad-linear, rather short; flowers comparatively small, solitary or two together, on conspicuous stalklets; stamens oftener five than four; fruit small, globular-ovate, two- or three-celled, its outer portion succulent. **M. deserti.**

Fruit bluish or purplish outside **1739**

1739. Leaves from elongate- to narrow-lanceolar.

A desert-species, often tall; leaves firm, rather long, much pointed; flowers axillary, two or few together; fruit ellipsoid-ovate, three- to five-celled, its outer portion succulent. **M. Dampieri.**

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Leaves from broad- to ovate-lanceolar.

A sylvan species, finally very tall; leaves rather long, usually of rather thin texture; flowers axillary, two or few or several together; fruit mostly ovate-globular, often four-celled, its outer portion succulent.

M. tenuifolium.

1740. Fruit gradually pointed.

A desert-species, finally arborescent, quite sticky, somewhat glandular-rough; leaves firm, from elongate- to linear-lanceolar, towards the summit distantly serrulated; flowers few or several together, on rather conspicuous stalklets; fruit small, dry, almost ovate, narrow-edged.

M. platycarpum.

Fruit truncate-blunt.

Seldom very tall, usually quite sticky; somewhat glandular-rough; leaves from narrow-lanceolar to broad- or elongate-linear, closely serrulated in their whole length, often of thin texture, sometimes recurved at the margin; flowers few or several together, occasionally as many as ten from one axil, their stalklets short; fruit small, dry, quadrate- or rhomboid-orbicluar, their narrow edge prominent.

M. floribundum.

EREMOPHILA.

1741. Segments of the calyx usually four.

A desert-species; branchlets rigid, spinescent; leaves small, firm, from elliptic- to cuneate-linear, entire, generally glabrous; flowers rather small, solitary or seldom two together, sessile; segments of the calyx lanceolar, pointed; corolla bluish or exceptionally white and almost undotted, outside invested with minute branched hairlets, its lobes comparatively short, the lowest slightly longer than broad, marked with darker dots and towards the base densely invested with hairlets; stamens nearly enclosed; fruit dry, gradually much pointed. **E. divaricata.**

Segments of the calyx always five 1742

1742. Corolla white 1743

Corolla reddish or bluish 1745

1743. Segments of the calyx membranous in texture, obtuse.

A tall desert-species, finally quite arborescent, often extensively beset with minute greyish or slightly yellowish hairlets; branchlets lax; leaves opposite or partly

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scattered, from lanceolar- to elongate-linear, recurved-pointed, entire, sometimes channelled; flowers comparatively large, axillary, solitary, on rather short stalklets; segments of calyx from cuneate- to spatular-elliptical, quite attenuated towards the base, their veinlets conspicuous; lowest lobe of the corolla about as broad as long; stamens slightly exserted; fruit relatively small, from narrow- to ovate-ellipsoid, dry, invested with short hairlets. **E. oppositifolia.**

Segments of the calyx foliaceous in texture, acute ... 1744

1744. Leaves mostly linear.

A desert-species, never tall; branchlets rigid, very spreading; leaves distant, very narrow, somewhat channelled, quite entire, glabrous; flowers large, axillary, solitary, on conspicuous stalklets; segments of the calyx from cordate- to ovate-lanceolar, recurved-pointed; corolla glabrous outside, its tube ample, its lowest lobe about as broad as long, yellowish and dotted towards the orifice; stamens quite enclosed; fruit dry, ellipsoid-ovate, gradually much pointed. **E. polyclada.**

Leaves mostly elongate-lanceolar.

A tall and glabrous desert-species, finally somewhat arborescent; branchlets lax, often pendent, rather sticky; leaves long, from narrow- to linear-lanceolar, quite entire; flowers large, axillary, solitary, on rather conspicuous stalklets, often bent downward; segments of calyx firm; corolla much dotted inside, its lowest lobe broader than long, slightly cleft; longest stamens somewhat emerging; fruit comparatively large, dry, generally ovate-globular. Figure 108. **E. bignoniflora.**

1745. Leaves much elongated.

A tall desert-species, finally somewhat arborescent, much beset with minute greyish hairlets; branchlets lax, somewhat pendent; leaves long, from narrow- to linear-lanceolar, gradually pointed, quite entire; flowers axillary, solitary or two together on usually short stalklets; calyx quite small; corolla dull-reddish, also externally invested with hairlets, much dotted inside, its lowest lobe longer than broad; stamens enclosed or slightly exserted; fruit comparatively small, nearly globular, the outer portion succulent, externally blackish. **E. longifolia.**

Leaves hardly elongated or quite abbreviated ... 1746

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1746. Stalklets of flowers elongated 1747

Stalklets of flowers abbreviated or undeveloped ... 1748

1747. Leaves from semicylindric to linear.

A desert-species, finally tall, granular-rough from resinous-glandular prominences; leaves linear, channelled, recurved-pointed, seldom verging into a lanceolar form; flowers large, axillary, solitary; lower portion of stalklets descending, upper ascending; outer segments of calyx almost ovate, inner nearly orbicular; corolla outside reddish, inside dotted with dark-purplish spots, four of its lobes quite short, forming an upper set, the fifth elongated, much longer than broad; stamens all shorter than the corolla; fruit dry, upwards gradually and often much attenuated. **E. alternifolia.**

Leaves from broad- to narrow-lanceolar.

A desert-species, finally rather tall; branchlets rigid; leaves very firm, from ovate- to narrow-lanceolar, never very long, seldom verging into a linear form, quite entire; flowers large, axillary, solitary; lower portion of stalklets descending, upper ascending; corolla very much longer than the calyx, outside reddish, inside dotted with dark-purplish spots, exceptionally bright-yellow, four of its lobes quite short, forming an upper set, the fifth elongated, much longer than broad; two of the stamens exceeding the corolla; fruit comparatively large, almost globular, dry. **E. maculata.**

1748. Lowest lobe of the corolla much longer than broad.

A desert-species, finally rather tall, almost completely or oftener imperfectly beset with minute hairlets; leaves from ovate-elliptical to narrow-lanceolar, exceptionally linear, usually quite entire; flowers rather large, axillary, on short stalklets, solitary or occasionally two together; corolla very much longer than the calyx, reddish, rarely green or bright-yellow, four of its lobes very abbreviated and forming an upper set, the fifth lobe elongated, but narrow; stamens much exserted; fruit globular, the outer portion succulent, externally dark-colored.
E. Brownii.

Lowest lobe of the corolla hardly longer than broad 1749

1749. Leaves opposite.

A desert-species, slender, densely beset with silver-shining scalelets; leaves firm, linear, somewhat channelled, recurved-pointed, quite entire; flowers rather small,

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axillary, solitary, on very short stalklets; calyx very small; corolla dull-bluish inside, much narrowed towards the base, its lobes comparatively short; stamens quite enclosed; fruit dry, somewhat pointed.
E. scoparia.

Leaves scattered.

Never tall; leaves very small, narrow, broadly sessile, mostly appressed, at the lower side convex and there beset with several or few resinous-glandular roundish prominences; flowers comparatively small, axillary, solitary, sessile; segments of calyx upwards linear; corolla inside partly beset with rigid hairlets, its lobes quite short; stamens quite enclosed; fruit very small, nearly ellipsoid, much compressed, dry.
E. gibbosifolia.

CONIFERAE.

CALLITRIS.

1750. Strobile-segments closely contiguous before expansion.

A desert-species, fruiting already as a shrub, but attaining to high-arborescent size; branchlets very slender, hardly angular; strobiles almost globular, solitary or few together; margins of the segments neither conspicuously angular nor forming furrows, the dorsal space often granular-rough, without any prominence; fruits seed-like; cotyledons two or three. **C. verrucosa.**

Strobile-segments separated externally by slight furrows before expansion 1751

1751. Three of the strobile-segments conspicuously dilated upwards, with a large pointed prominence near the middle.

Generally a hill-species, often attaining to high-arborescent size; branchlets rather slender, somewhat angular; strobiles almost globular, often clustered; fruits seed-like; cotyledons two or three. Figure 111.
C. cupressiformis.

Three of the strobile-segments hardly dilated upwards, with a small pointed prominence near the summit.

Here either a coast- or hill-species, attaining to arborescent size; branchlets rather slender, somewhat angular; strobiles usually clustered, almost ellipsoid-ovate; fruits seed-like; cotyledons two or three. **C. calcarata.**

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NAGEIA.

1752. Often amply depressed.

On alpine summits prostrate, in valleys erect but never tall; leaves quite small, often turning into two rows, spreading, very rigid, from elliptic- to broad-linear, thickened at the margin, whitish or greyish beneath; staminate spikes very short, generally solitary; racheoles pointed; fruit quite small, oblique-ovate, its stalk bright-red, somewhat bilobed at the summit. **N. alpina.**

ORCHIDEAE.

DIPODIUM.

1753. Scale-like rudiments of leaves crowded towards the base of the stem, distant upwards.

Parasitic on roots; stem comparatively tall, reddish-dark; rudimentary leaves or leaf-stalks broadly clasping; raceme many-flowered; calyx-lobes and petals of almost equal length, reddish or seldom pale-greenish, always spotted with dark-red dots; lowest petal (labellum) short-bilobed below the middle, thence elliptical and partly beset with minute hairlets on the upper side; gynostemium short, scarcely dilated; fruit turgid at and towards the middle. **D. punctatum.**

GASTRODIA.

1754. Lower petal narrowed towards the base, much dilated towards the middle, thence crisped upwards.

Parasitic on roots; stem somewhat tall; rudimentary leaves or leaf-stalks broadly clasping, distant; flowers few or several or many in the raceme, turned upside down; calyx anteriorely short-slit, obliquely turgid above the ovulary; upper petals free only from between the calyx-lobes; lower petal much larger, free from the calyx-tube except at the base, lined by two upwards confluent yellowish ridgelets, slightly longer than the gynostemium; stigma basal; fruit oblique-turgid. **G. sesamoides.**

DENDROBIUM.

1755. Leaves from ovate- to elongate-elliptical.

Generally a rock-plant, always tall; stems marked by transverse distant lines; leaves very large, few, terminally crowded, rigidly firm; racemes long, somewhat curved downward; flowers large, numerous, turning upside down through the curvature of the raceme, cream-colored or pale-yellow; bracts very small; calyx-lobes and lateral petals narrow-lanceolar, but the lower calyx-lobes

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obliquely dilated towards the base, all of nearly equal length; lower petal considerably shorter, white with purple spots, its middle lobe rather broader than long; gynostemium short; fruit turgid. **D. speciosum.**

Leaves narrow-cylindrical.

Generally a rock-plant, always dwarf, amply rooting, thin-branched; leaves pointed, somewhat curved; flowers solitary, on elongated stalks, turning upside down, whitish-yellow, reddish-streaked; bract minute; calyx-lobes about as long as the petals, almost lanceolar, but the lower towards the base obliquely dilated; lower petal quite as long as the others, whitish, its middle lobe nearly semielliptical in outline, crisped; gynostemium truncate-ellipsoid, very short; fruit rather turgid. Figure 112. **D. striolatum.**

SARCOCHILUS.

1756. **Calyx-lobes and lateral petals greenish, the lower calyx-lobes distant from the upper.**

Epiphytal, chiefly on branches of the musk-tree; stem very short or obliterated; leaves few or several, narrow-lanceolar, rather curved; flowers from few to many in axillary raceme-like spikes, fragrant; bracts quite small; calyx-lobes and lateral petals almost lanceolar; lower petal whitish; its lateral lobes very conspicuous, oblique-elliptical, red-spotted; its middle lobe minute, but terminating a thick often dilated and blunt basal protrusion; gynostemium very short; fruit many times longer than broad. **S. parviflorus.**

CALEYA.

1757. **Labellum fixed above its lower end to the stalk-like base.**

Rather tall; leaf broad-linear, basal; stem with one empty bract near the middle; flowers large, one to three, with an additional rudimentary one, dark-purplish except the calyx-tube; stalklets short; paired calyx-lobes inserted close to the third lobe; labial petal (labellum) roundish-ovate, pointed, concave beneath; gynostemium very large; fruit slender. **C. major.**

Labellum gradually narrowed into the stalk-like base.

Rather dwarf; leaf narrow-linear; stem without any empty bract; flowers small; paired calyx-lobes inserted at some distance from the third lobe and from the paired petals; labial petal lanceolar-ovate, close to the paired calyx-lobes; fruit slender. **C. Sullivani.**

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CRYPTOSTYLIS.

1758. Labellum soon reflexed along the margin.

Rather tall; leaves elongate- or elliptical-lanceolar, varying occasionally to roundish-ovate, but always acute; empty bracts usually two or three; flowers from three to twelve, their stalklets very short; floral bracts conspicuous; calyx-lobes and paired petals greenish; labial petal large, from a slightly bilobed base somewhat elliptical, mostly dull-purplish; its small double protuberance infra-terminal; gynostemium extremely short; fruit rather slender. **C. longifolia.**

PRASOPHYLLUM.

1759. Usually robust and tall 1760

Usually slender and dwarf 1763

1760. Labellum almost straight, its membranous portion narrow and but slightly surpassing the callous portion 1761

Labellum quite bent back from the middle, its membranous portion broad and far surpassing the callous portion 1762

1761. Paired calyx-lobes partially or much connate.

Often remarkably tall and robust; leaf from far above the base of the stem, occasionally abbreviated or almost deficient; spike many-flowered, sometimes very long; flowers comparatively large, dark-colored or yellowish-greenish; paired petals broadish-lanceolar, labellum sessile, its membranous margin paler, slightly crisped; fruit hardly turgid. **P. elatum.**

Paired calyx-lobes quite disconnected.

Often less tall and robust; leaf from far above the base of the stem; spike with several or many flowers; flowers dark-colored or greenish; paired petals linear-lanceolar; labellum sessile, its membranous margin paler, flat; fruit somewhat oblique-turgid. **P. fuscum.**

1762. Paired calyx-lobes quite disconnected.

Leaf from far above the base of the stem; spike with several or many flowers; calyx-lobes greenish or slightly yellowish; paired petals rather narrow, nearly blunt, pale; labellum sessile, its membranous portion whitish and crisped; fruit somewhat oblique-turgid.

P. patens.

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Paired calyx-lobes partially or much connate.

Leaf from far above the base of the stem, sometimes rather short; spike with several or many flowers; calyx-lobes and paired petals greenish, pointed, somewhat dark-streaked; labellum sessile, concave at the base, its membranous portion whitish and crisped; fruit hardly turgid. **P. australe.**

1763. **Labellum without any ciliolation** 1764

Labellum with a conspicuous ciliolation 1766

1764. **Labellum gradually much pointed.**

Very slender, leaf undeveloped or proceeding separately from the flowering stem; spike very short, with a foliaceous bract or rudimentary leaf near below it; flowers very small, dark-reddish; paired calyx-lobes disjointed; labellum almost straight, reddish, slightly denticulated; as well as the other petals narrow-lanceolar; fruit somewhat oblique-turgid. **P. despectans.**

Labellum hardly pointed or blunt 1765

1765. **Paired calyx-lobes bulging at the base.**

Very slender; leaf undeveloped or proceeding separately from the flowering stem or developed at a different time; spike very short, with a foliaceous bract or rather rudimentary leaf near it below; flowers very small, dark-purplish and somewhat greenish; paired calyx-lobes disjointed; paired petals deltoid-lanceolar; labellum lanceolar-ovate, extremely short; fruit somewhat turgid. **P. nigricans.**

Paired calyx-lobes almost flat at the base.

Quite slender; leaf proceeding separately from the flowering stem, but often simultaneously; spike very short, with a rudimentary leaf or foliaceous bract near it; flowers minute, closely approximated, reddish; paired calyx-lobes disjointed, as well as the paired petals and labellum almost lanceolar; fruit oblique-ellipsoid. **P. rufum.**

1766. **Length of the labellum hardly double that of its breadth.**

Very slender; leaf undeveloped or proceeding separately from the flowering stem; spike very short, rather distant from the rudimentary stem-leaf; flowers quite small, yellowish and reddish; paired calyx-lobes disjointed, much longer than the paired petals; labellum extremely short, almost ovate, its ciliolation very minute; fruit oblique-ellipsoid. **P. intricatum.**

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Length of the labellum fully triple that of its breadth 1767

1767. Labellum rather dilated towards the upper end.

Very slender; leaf undeveloped or proceeding separately from the flowering stem; spike very short, somewhat distant from the rudimentary stem-leaf; flowers quite small, dull-reddish; paired calyx-lobes disjointed, somewhat bulging and then contracted at the base; paired petals streaked; labellum narrow-elliptical, conspicuously fringed; fruit oblique-ellipsoid. **P. fimbriatum.**

Labellum rather attenuated towards the upper end.

Very slender; leaf undeveloped or proceeding separately from the flowering stem; spike usually few-flowered, with a rudimentary leaf close to it; flowers rather small; paired calyx-lobes somewhat pale; petals deltoid-lanceolar, pointed, reddish, streaked; labellum lanceolar-elliptical, dark-purplish, conspicuously fringed; fruit oblique-ellipsoid. **P. Archeri.**

SPIRANTHES.

1768. Flowers small, with the exception of the white labellum red.

Lowest or lower leaves often from broad- to linear-lanceolar, upper gradually shorter and clasping, sometimes quite diminutive; spike elongated, bearing numerous closely approximated spirally uniseriate flowers, often somewhat beset with hairlets; bracts hardly as long as the flowers or shorter, rarely longer; labellum upwards dilated, crisped and denticulated; fruit very small, quite turgid. **S. Australis.**

THELYMITRA.

1769. Calyx-lobes and petals bluish or violet or almost greyish 1770

Calyx-lobes and petals reddish or yellowish 1774

1770. Appendages of the gynostemium bright-yellow, rough.

Rather dwarf, slender; lower leaf linear, channelled; upper leaves bract-like; flowers few or two or one, violet-blue; appendages of the gynostemium firm, nearly elliptical, somewhat distant, much longer than the interjacent terminal plate; fruit almost ellipsoid. **T. Mackibboni.**

Appendages of the gynostemium terminated each by a tuft of hairlets 1771

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1771. Lower leaf narrow **1772**

Lower leaf broadish **1773**

1772. Bearded appendages reaching only the height of the hood-like entire or slightly bilobed middle summit of the gynostemium.

Hardly or somewhat tall; lower leaf from broadish- to narrow-linear, channelled; upper leaves much abbreviated; calyx-lobes and petals dotless; smooth portions of the appendages of the gynostemium shorter than the tuft of hairlets; fruit almost narrow-ellipsoid. **T. longifolia.**

Bearded appendages reaching much beyond the sharply denticulated middle summit of the gynostemium.

Hardly or seldom tall, often rather slender; lower leaf channelled-linear; upper leaves diminutive; calyx-lobes and petals somewhat dotted inside; smooth portions of the appendages of the gynostemium longer than the tuft of hairlets; denticulation between them irregular; fruit almost ellipsoid. **T. ixioides.**

1773. Calyx-lobes inside and petals bluish.

Quite tall, comparatively robust; longitudinal venules of leaf thick and beneath prominent; upper leaves two or three, rather conspicuous, though very much shortened; flowers many in the raceme; gynostemium nearly twice as long as broad, its terminal crest bright-yellow; the narrow glabrous portion of the two appendages about as long as the tuft of hairlets; no lobes between the crested summit and the lateral appendages; anther minutely apiculate; fruit almost ellipsoid. **T. aristata.**

Calyx-lobes inside and petals almost greyish.

Quite tall, comparatively robust; longitudinal venules of leaf thick and beneath prominent; upper leaves two or three, conspicuous, though much shortened; flowers many in the raceme, opening tardily; petals inside somewhat bluish; gynostemium hardly longer than broad, the narrow glabrous portion of the two appendages much shorter than the tuft of hairlets; terminal crest of the gynostemium pale-yellowish, two semilanceolar connivent lobes between the crested summit and the appendages; anther conspicuously pointed; fruit almost ellipsoid.
T. epipactoides.

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1774. Calyx-lobes and petals wholly reddish 1775

Calyx-lobes and petals wholly or partly yellowish ... 1776

1775. Appendages extending in height to the summit of the gynostemium.

Slender; lower leaf linear, channelled; upper leaves bract-like; flowers small, few or two or sometimes one; appendages of the gynostemium bright-yellow, hardly rough, separated by the slightly crested and undivided middle-summit; fruit almost narrow-ellipsoid.

T. carnea.

Appendages extending much beyond the summit of the gynostemium.

Slender, rather dwarf; lower leaf linear, channelled; flowers few or two or one; gynostemium without hood or conspicuous plate at the summit; its two appendages bright-yellow, crenulated, elliptic-cuneate, approximated, overtopping the anther; fruit almost narrow-ellipsoid.

T. Macmillani.

1776. Gynostemium terminated by two purplish-dark smooth appendages.

Slender, rather dwarf; leaves narrow-linear, channelled; flowers rather large, few or two or one, yellow inside, often somewhat reddish outside; gynostemium without hood or terminal plate; it appendages ovate- or obcordate-cuneate; fruit almost narrow-ellipsoid.

T. antennifera.

Gynostemium terminated by two orange-yellow rough appendages.

Slender, rather dwarf; lower leaf narrow-linear, channelled; flowers rather small, two or one, yellow inside, often somewhat reddish outside; plate at the middle-summit of the gynostemium shorter than the anther; fruit almost narrow-ellipsoid. **T. flexuosa.**

CALOCHILUS.

1777. Narrowed apex of the labellum extremely short.

Hardly tall; lower leaf elongated, broad-linear, channelled; upper leaves much abbreviated; bracts mostly equal in length to the flowers or surpassing them; flowers generally several in the raceme, rather large; calyx-lobes greenish; labellum exserted, its hair-like processes purplish or somewhat yellowish and brownish; gynostemium lined by a transverse callosity across the base; anther short-pointed; fruit clavate-ellipsoid. **C. Robertsoni.**

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MICROTIS.

1778. Flowers variously small, but never minute.

Hardly dwarf, very slender; flowers light-green; bracts very short; fruit quite short, obovate-ellipsoid.
M. porrifolia.

Flowers always very minute.

Very dwarf; remarkably slender; flowers yellowish-green, only through decay or exsiccation blackish; bracts extremely short; fruit minute.
(M. atrata.) **M. minutiflora.**

DIURIS.

1779. Petals lilac-colored.

Tubers thick, occasionally bilobed; basal leaves broad-linear, channelled, usually two; rudimentary leaves one to three, almost bract-like; flowers five or less, rarely reduced to one; bracts conspicuous; lower lobes of the calyx much longer than the labellum, greenish or somewhat brownish; petals spotless, narrowed into a stalk-like base; middle lobe of the labellum semiorbicular-rhomboid, with two longitudinal white but purplish-dotted narrow elevations towards the base; lateral lobes much shorter; fruit slightly turgid.
(D. elongata.) **D. punctata.**

Upper calyx-lobe and petals white or yellowish or somewhat brownish 1780

1780. Upper calyx-lobe and petals white.

Tubers thick, occasionally lobed; basal leaves usually two, broad-linear, channelled; rudimentary leaves two or three, bract-like; flowers generally two or three; bracts conspicuous; lower lobes of the calyx much longer than the labellum, greenish and somewhat brownish; petals spotless, narrowed into a stalk-like base; middle lobe of the labellum more than twice as long as the lateral lobes, often slightly pink, almost rhomboid, with two narrow dotted elevations towards the base; lateral lobes somewhat indented; fruit slightly turgid. (Possibly a variety of the former.) **D. alba.**

Upper calyx-lobe and petals yellowish or somewhat purple-brownish 1781

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1781. Flowers comparatively small.

Dwarf; basal leaves narrow-linear, usually more than two; flowers few or reduced to two or one; petals yellowish, marked with several dark spots; lower calyx-lobes somewhat longer than the labellum, greenish or rather brownish; the latter with two narrow longitudinal elevations towards the base, its middle lobe very blunt, slightly exceeding the lateral lobes; fruit rather slender.
D. palustris.

Flowers comparatively large 1782

1782. Middle lobe of the labellum less than twice as long as the lateral lobes, obtuse 1783

Middle lobe of the labellum more than twice as long as the lateral lobes, acute 1784

1783. Upper calyx-lobe and petals confluently yellowish and brownish.

Root-fibres tuberously thickened; basal leaves usually two or three, broad-linear, somewhat channelled; upper leaves one or two, almost bract-like; flowers few, occasionally reduced to two or even one; bracts conspicuous; lower calyx-lobes hardly twice as long as the labellum; paired petals narrowed into a short stalk-like base, with the upper calyx-lobe and labellum rarely turning plain-yellowish; labellum without prominent longitudinal narrow elevations towards the base, its middle lobe dilated upwards; fruit rather slender.
D. longifolia.

Upper calyx-lobe and petals yellow, all dark-spotted.

Tubers thick; basal leaves usually two, broad-linear, channelled; flowers few or several; lower calyx-lobes about twice as long as the labellum, greenish or partly brownish, somewhat turning across each other; paired petals narrowed into a stalk-like base; labellum with two longitudinal narrow elevations towards the base; its middle lobe hardly longer than broad, of scarcely double the length of the lateral lobes or even shorter; fruit slender.
D. maculata.

1784. Upper calyx-lobe and petals in part dark-blotched.

Tubers rather slender; basal leaves usually two, broad-linear, channelled; upper leaves generally bract-like; flowers six or fewer, occasionally only two; bracts conspicuous; lower calyx-lobes about twice as long as the

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labellum, brownish-green; upper calyx-lobe and petals of nearly equal length, light-yellow, the spots large, generally two on the upper calyx-lobe and labellum; paired petals with short stalk-like base; middle lobe of the labellum rather acute, without prominent longitudinal narrow elevations towards the base, much exceeding the short lateral lobes; fruit rather slender.

D. sulphurea.

Upper calyx-lobe and petals in part minutely dotted.

Tubers thick; basal leaves few or several, from broad- to narrow-linear, often rather short; upper leaves two or three, very much abbreviated or bract-like; flowers few or two, seldom one, the lower on rather long stalklets; lower calyx-lobes greenish or somewhat brownish, little longer than the labellum; paired petals yellow, acute, narrowed into a very short stalk-like base; labellum with two narrow prominent longitudinal elevations towards the base, these beset with very minute hairlets; its middle lobe quite acute, downward dilated, very much exceeding the minute lateral lobes; fruit rather slender.

D. pedunculata.

ORTHOCERAS.

1785. **Paired calyx-lobes much extending beyond the other parts of the flower.**

Somewhat tall; longest leaves at and towards the stem-base approximated; flowers rather distant, comparatively large; bracts conspicuous; lateral lobes of the labellum quite short; fruit oblique-ellipsoid. **O. strictum.**

CORYSANTHES.

1786. **Upper-calyx lobe gradually narrowed to the base.**

Quite dwarf; leaf green also underneath; flower of considerable size, purplish-dark except part of the outer side of the upper calyx-lobe; labellum conspicuously contracted towards the base, slightly or shortly denticular-fringed, its upper portion dilated, curved forward and streaked; fruit slender-ellipsoid. **C. pruinosa.**

LYPERANTHUS.

1787. **Radical leaf present at the flowering time.**

Somewhat dwarf, but robust, turning black in drying; basal leaf rather large, from ovate to orbicular-cordate, of thick texture, sessile; flowers large, several, few or two, largely reddish, but to some extent colorless and transparent;

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bracts very conspicuous; calyx-lobes and petals much narrowed upwards; upper calyx-lobe arched; labellum downward longitudinally inflexed, upwards recurved, fringed and gradually narrowed; fruit somewhat turgid.
L. nigricans.

Radical leaf absent at the flowering time.

Quite dwarf; basal leaf rather small, ovate-lanceolar, of thin texture; flowers rather small, one to three; calyx-lobes and petals reddish-brown and partly whitish; labellum almost as broad as long, slightly denticulated, truncate-blunt; fruit rather slender. **L. Burnetti.**

ACIANTHUS.

1788. **Upper lobe of the calyx very much elongated.**

Mostly dwarf and slender; leaf sessile, somewhat pointed, purplish underneath; flowers except the calyx-tube dark- or dull-purplish; bracts very short; calyx-lobes very narrow, the lower many times longer than the petals; labellum very short, gradually pointed; gynostemium very narrow; fruit slender. **A. caudatus.**

Upper lobe of the calyx quite short.

Dwarf and slender; leaf sessile, somewhat pointed, purplish underneath; flowers few or several, very small, except the calyx-tube pale-pink; bracts very short; calyx-lobes pointed, about twice as long as the petals, the upper almost erect; labellum narrow, acute, smooth or slightly papillular; gynostemium very narrow; fruit slender.
(A. Brunonis.) **A. exsertus.**

CYRTOSTYLIS.

1789. **Flowers small, except the calyx-tube pale- or dull-purplish.**

Always dwarf, quite slender; leaf sessile, shining, green on both sides or reddish below; bracts very small; calyx-lobes and petals delicately membranous, nearly of equal length; labellum comparatively narrow, yet broader than the lower calyx-lobes and other petals, blunt, lined with two dark-red elevations; gynostemium dilated towards the summit; fruit slender. **C. reniformis.**

ERIOCHILUS.

1790. **Labellum ovate-cuneate, much recurved, slightly fringed.**

Never tall, always very slender; basal leaf from cordate- to lanceolar-ovate; stem-leaves none; flowers rather small, three or two or one; lower lobes of the calyx very tender,

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from ovate- to narrow-lanceolar, pointed, much narrowed towards the base, about twice as long as the petals, white or slightly pink; upper calyx-lobe and petals somewhat red; gynostemium narrow; fruit slender.
E. autumnalis.

Labellum semiorbicular-cuneate, nearly flat, conspicuously fringed.

Never tall, always very slender; basal leaf lanceolar-ovate, not rarely accompanied by a second; stem-leaf distant, elliptic-lanceolar, somewhat or considerably shorter; flowers rather small, one or less commonly two; lower lobes of the calyx narrowly elliptic-lanceolar, reddish, about as long as the petals; gynostemium narrow; fruit rather slender. Figure 113. **E. fimbriatus.**

CALADENIA.

1791. Paired petals erect, longer than the calyx-lobes and much narrower.

Never tall, slightly beset with hairlets; basal leaf almost glabrous, from broad-lanceolar to nearly ovate, usually much shorter than the stem; upper leaf bract-like; flowers one or two, the lower if present on a rather long stalklet; bracts conspicuous; calyx-lobes mostly pale-reddish; paired petals almost linear, dark-red; labellum transversely striped, its glandules yellow, its middle lobe upwards much narrowed and recurved; fruit somewhat turgid. **C. Menziesii.**

Paired petals spreading and similar to the calyx-lobes 1792

1792. Calyx-lobes as well as the paired petals much narrowed upwards and thus conspicuously elongated.

Often somewhat tall, but slender, always conspicuously beset with soft spreading glandule-bearing hairlets; basal leaf from linear- to elongate-lanceolar; stem-leaf diminutive; bracts conspicuous; flowers large, one or two, seldom more, almost white or variously reddish or somewhat greenish or pale-yellowish, except the calyx-tube; labellum broad, variously fringed or denticulated and callous-glandular, the middle lobe often more deeply colored; glandules variable in copiousness, arrangement, shape and color, but mostly seriated; gynostemium upwards dilated; fruit somewhat turgid. "Spider-Orchid." **C. Patersoni.**

Calyx-lobes slightly narrowed upwards 1793

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1793. Flowers except the calyx-tube pink, whitish or reddish- or brownish-yellow 1794

Flowers except the calyx-tube blue 1797

1794. Quite glabrous.

Rather tall, somewhat robust; basal leaf much elongated, from lanceolar- to broad-linear; stem-leaves two or three, diminutive, bract-like; flowers two or oftener few or several, nearly sessile, often reddish or brownish upwards and yellowish towards the base; bracts very conspicuous; upper lobe of the calyx narrow- or linear-lanceolar; lower calyx-lobes as well as the petals almost linear; labellum arched-curved, slightly trifid, generally white towards the base and pale-yellowish towards the summit, the lateral lobes dark-red, its middle lobe almost semielliptical; glandules copious, yellow; fruit slender.

C. suaveolens.

More or less beset with hairlets 1795

1795. Basal leaf elongate- or elliptic-lanceolar.

Much beset with soft hairlets; stem-leaves one or two, diminutive; bracts conspicuous; flowers mostly two or three, seldom more; calyx-lobes and petals almost elliptic-lanceolar, pink or occasionally whitish; labellum comparatively short, conspicuously trifid, the middle lobe narrow-lanceolar, glandular-notched; glandules converging in the middle of the labellum; fruit slender.

C. latifolia.

Basal leaf broad-linear 1796

1796. Glandules of the labellum yellow or whitish or reddish.

Slender, usually rather dwarf; somewhat beset with often glandule-bearing hairlets; stem-leaf diminutive, bract-like; bracts conspicuous; flowers one to five, rather small; calyx-lobes and petals almost lanceolar, pink or whitish, or outside somewhat brownish or greenish; the upper calyx-lobe somewhat curved inward; labellum slightly trifid, as well as the gynostemium transversely streaked; the middle lobe semilanceolar-deltoid, recurved, pointed, smooth or somewhat glandular, slightly fringed; fruit slender. **C. carnea.**

Glandules of the labellum purplish-black.

Slender, beset with minute glandule-bearing hairlets; flowers one to three, pink; calyx-lobes and petals almost lanceolar; labellum deeply trifid, the middle lobe semi-lanceolar, recurved, quite covered with glandules; fruit slender. (Perhaps a variety of the preceding.) **C. congesta.**

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1797. Glandules of the labellum mostly yellow.

Dwarf, slender, slightly beset with glandule-bearing hairlets; basal leaf linear, evidently shorter than the stem; stem-leaf bract-like; flower rather small, solitary; calyx-lobes and petals elliptic-lanceolar, outside dotted; labellum recurved, slightly trifid, transversely streaked; its middle-lobe white towards the base, yellow towards the summit; glandules occupying almost only the longitudinal axis of the labellum; fruit slender. **C. coerulea.**

1797*b*. Glandules of the labellum mostly blue.

Dwarf, slightly beset with glandular-hairlets; basal leaf broad-linear, about as long as the stem; stem-leaf diminutive; flower solitary, fragrant; calyx-lobes and petals nearly lanceolar-elliptical, outside dotless; labellum recurved, almost entire, completely blue, denticular-fringed, its glandules occupying nearly the whole surface of the labellum, their basal attenuation whitish and rough; fruit slender. **C. deformis.**

GLOSSODIA.

1798. Labellum provided at the base with a slender shortly bilobed appendage.

Rather tall, conspicuously beset with soft spreading hairlets; basal leaf from broad- to narrow-lanceolar, much shorter than the stem; upper leaf one, bract-like; flowers one or seldom two, rather large; calyx-lobes and paired petals elliptic-lanceolar, bluish inside, often pale outside, rarely quite pink or white on both sides; lower portion of the labellum dilated, bulging, beset with minute white hairlets; upper portion bluish and gradually pointed, hardly curved; summit of the appendage yellow; fruit slender. **G. major.**

Labellum provided at the base with two parallel linear somewhat club-shaped appendages.

Rather dwarf, very slender, much beset with soft spreading hairlets; basal leaf almost lanceolar; upper leaf one, bract-like; flowers rather small, usually solitary; calyx-lobes and paired petals elliptic-lanceolar, bluish inside, rather whitish outside; lower portion of the labellum dilated, bulging, beset with white minute hairlets; upper portion bluish, deltoid, pointed; summit of the appendage dark-purplish; fruit slender. **G. minor.**

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CHILOGLOTTIS.

1799. Upper lobe of the calyx quite narrow; labellum broadest upward.

Slender, never tall; leaves mostly elliptic- or elongate-lanceolar, generally almost sessile; flowers except the calyx-tube and gynostemium dull-purplish; upper calyx-lobe somewhat dilated near or above the middle; paired petals lanceolate-linear, bending downward; labellum almost rhomboid, more narrowed towards the base, above imperfectly beset with small glandular usually numerous callosities, and bearing a nearly central callous depressed appendage; gynostemium narrow, greenish; fruit rather turgid. **C. diphylla.**

Upper lobe of the calyx quite broad; labellum broadest downward.

Usually dwarf, but rather stout; leaves mostly ovate-lanceolar and short-stalked; flower comparatively large, dull-purplish or greenish; bract conspicuous; upper lobe of the calyx lanceolar-ovate, lower quite narrow; paired petals oblique-lanceolar; labellum nearly sessile, almost cordate-ovate, somewhat pointed, beset with small callosities towards the middle and base only; fruit rather turgid, its stalklet sometimes very much elongated. **C. Gunnii.**

PTEROSTYLIS.

1800. Flowers two or more in the raceme or spike, exceptionally one 1801

Flower always one only 1806

1801. Lower and upper calyx-lobes nearly parallel ... 1802

Lower calyx-lobes divergent from the upper ... 1803

1802. Calyx-lobes acute.

Basal leaves small, few, on a shoot distinct from the flowering stem, rhomboid-ovate; stem-leaves two or three, almost bract-like, distant; bracts rather conspicuous; flowers small, from two to several, anteriorely often somewhat tinged with red; lower calyx-lobes connate to beyond the middle, hardly reaching to the summit of the upper calyx-lobes; labellum glabrous, linear-elliptical, its basal appendage slightly setular; gynostemium suddenly dilated near the summit, and bearing two minute linear erect segments; fruit somewhat turgid. **P. parviflora.**

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Calyx-lobes obtuse.

Often dwarf; basal leaves small, few, on a shoot distinct from the flowering stem and usually appearing at a different time, rhomboid-ovate; upper leaves about four, very small, almost bract-like, nearly lanceolar, approximated at the lower half of the stem; flowers small, from two to several, exceptionally one only, anteriorely often somewhat tinged with red; lower calyx-lobes transparent and almost colorless, connate to near the summit; gynostemium suddenly dilated near the summit and bearing two minute linear erect segments; fruit somewhat turgid. Perhaps variety of the preceding.

P. aphylla.

1803. **Basal leaves absent or early perishing** 1804

Basal leaves always present 1805

1804. **Upper calyx-lobe lined with narrow streaks.**

Often rather tall; stem-leaves several, from lanceolar to broad-linear, sessile, somewhat clasping, those towards the middle of the stem the largest; the basal leaves stalked, much shorter and broader, but early fugacious; flowers rather small, several or many in the raceme or occasionally few only; bracts very conspicuous, the lower leaf-like; lower calyx-lobes connate to beyond the middle, pendent; labellum rough, bidenticulated or truncate-blunt, anteriorely turgid near the base; gynostemium suddenly dilated upwards, somewhat fringed; stigma distant from the anther; fruit ovate-ellipsoid.

P. longifolia.

Upper calyx-lobe banded with broad streaks.

Rather robust, often dwarf; stem-leaves several, mostly narrow-lanceolar, sessile, somewhat clasping, those towards the middle of the stem the largest; bracts leaf-like; flowers rather large, almost axillary, somewhat reddish-banded, few or several in the raceme, very seldom reduced to one, provided with an extremely thin vestiture; upper calyx-lobe very bulging, its streaks dull-purplish; lower calyx-lobes connate to near the summit, pendent, brownish-red; labellum slightly fringed, truncate-blunt, emitting anteriorely from the base a semilanceolar minute appendage; gynostemium gradually expanded towards the middle, its terminal appendages quadrate and downward narrowly lobed; fruit ovate-ellipsoid. **P. vittata.**

1805. **Flowers usually large, the calyx-lobes pointed.**

Hardly ever tall; basal leaves from ovate- to elliptic-lanceolar, crowded; stem-leaves two or generally more,

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clasping, almost bract-like; flowers rather large, two or oftener few or several, somewhat brown-reddish; lower calyx-lobes pendent, generally transparent between the reticular venulation, from rather short-pointed to much filamentous-elongated; labellum blunt, variously ciliolated and at the anterior base turgidly swollen; gynostemium-appendages ciliolated, both its angles blunt or the upper slightly pointed; fruit somewhat turgid. **P. rufa.**

Flowers always small, the calyx-lobes blunt.

Dwarf; basal leaves from orbicular- to lanceolar-ovate, rather short; stem-leaves from few to several, approximated, clasping, almost bract-like; flowers few or oftener several or many in the spike; bracts rather short; lower calyx-lobes connate to near the summit; labellum glabrous, almost orbicular-ovate, its appendage anteriorely basal, almost clubshaped, dark-green upwards; gynostemium-appendages truncate at the summit, blunt-lobed downward; fruit somewhat turgid. **P. mutica.**

1806. Lower calyx-lobes diverging from the upper.

Dwarf; basal leaves rather short, from ovate to narrow-lanceolar, crowded; stem-leaves few, with exception of the lowest almost bract-like; flower large, its stalklet usually much extending beyond the bract; upper calyx-lobe nearly straight and erect, short-pointed; lower two quite narrow, semi-connate; labellum elongated, almost filiform, long-exserted, much beset with yellow hairlets, ending in a small purplish glabrous dilatation; gynostemium-appendages very narrowly protracted at the upper angle; fruit truncate-ovate. **P. barbata.**

Lower calyx-lobes placed across the upper 1807

1807. Basal leaves absent at flowering time 1808

Basal leaves present at flowering time 1810

1808. Labellum quite blunt.

Never tall; stem-leaves three or four, short, narrow-lanceolar, much pointed and clasping, the largest towards the flower; basal leaves roundish-ovate, only occurring in the early stage of the plant; flower rather large, sometimes anteriorely slightly reddish; bract similar to the stem-leaves; calyx-lobes ending in narrow elongations, the lower from above their junction separated by a wide sinus, extending far across the upper; labellum very much longer than broad, blunt, smooth; appendages near the summit of the gynostemium glabrous, acute upwards, obtuse downward; fruit rather slender. **P. obtusa.**

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Labellum gradually pointed 1809

1809. Upper calyx-lobe extended into a short and but slightly incurved elongation.

Never tall; stem-leaves small, few, from linear- to narrow-lanceolar, the largest towards the flower; bracts in size and shape quite leaf-like; lower calyx-lobes from above their junction separated by a rather wide sinus, hardly surpassing the upper; labellum pointed; upper angle of the gynostemium-appendages acute, lower obtuse; fruit rather turgid. Probably to be united with the following. (P. alata.) **P. praecox.**

Upper calyx-lobe extended into a long arched-incurved elongation.

Never tall; stem-leaves small, few, from linear- to narrow-lanceolar, the largest towards the flower; bract in size and shape quite leaf-like; flower often large, sometimes anteriorely slightly reddish; lower calyx-lobes from above their junction separated by a rather narrow sinus, much surpassing the upper; labellum upwards gradually much narrowed, at the base provided with a brush-like appendage; upper angle of the gynostemium-appendages pointed, lower blunt and ciliolated; fruit rather slender. **P. reflexa.**

1810. Labellum excised at the summit.

Dwarf and slender; basal leaves rather small, nearly ovate or somewhat rhomboid; stem-leaf one only, bract-like; flowers comparatively small; bract near the calyx-tube; upper calyx-lobe simply acute, surpassed by the almost setular ends of the lower lobes; labellum several times longer than broad, glabrous, its basal appendage brush-like; upper angle of the gynostemium-appendages much pointed; fruit somewhat turgid. **P. concinna.**

Labellum entire also at the summit 1811

1811. Flower quite small 1812

Flower large or of moderate size 1813

1812. Labellum cordate-ovate.

Dwarf, very slender; leaves quite small, from rhomboidal- to lanceolar-ovate, all basal or one at some distance from the stem-base and often conformous; all three calyx-lobes

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upwards almost setular; labellum very short, ovate- or orbicular-cordate, glabrous, its basal appendage almost brush-like; gynostemium upwards much pointed; fruit slender. **P. pedaloglossa.**

Labellum linear-elliptical.

Dwarf; basal leaves quite small, from orbicular- to rhomboidal-ovate; stem-leaf one only, bract-like; upper calyx-lobe simply acute; lower calyx-lobes upwards almost setular, the wide sinus between them bearing a minute inflexed lobule in the middle; labellum short, blunt, its appendage imperfectly penicillar; upper angle of the gynostemium-appendages pointed; fruit rather slender. **P. nana.**

1813. Basal and stem-leaves of nearly equal size.

Rather tall, occasionally very much so; basal leaves few, large, sometimes very long, rather firm, from ovate- to elongate-lanceolar; stem-leaves one or two, nearly as long as the others but narrower; bract large, quite leaf-like; flower very large, its stalklet soon elongated; upper calyx-lobe short-pointed; lower calyx-lobes almost setularly narrowed, reaching across and somewhat beyond the upper; labellum glabrous, narrowly elliptical-lanceolar, hardly pointed, its basal appendage brush-like; appendages of the gynostemium minutely apiculated, glabrous; fruit somewhat turgid. **P. cucullata.**

Basal leaves much larger than the stem-leaves. 1814

1814. Flower much bent downward.

Somewhat tall or comparatively dwarf; basal leaves from lanceolar-to roundish-ovate; stem-leaf only one, generally near the others but much smaller or bract-like; flower on a long stalklet; bract conspicuous; upper calyx-lobe longitudinally much curved inward, slightly pointed, about equal in length to the two lower; labellum narrow-elliptical, blunt, glabrous, its basal appendage somewhat brush-like; upper angle of the gynostemium-appendages ending in very narrow and pointed lobules; fruit rather slender. **P. nutans.**

Flower hardly or slightly bent downward 1815

1815. Labellum much pointed.

Never tall; basal leaves from lanceolar- to orbicular-ovate; stem-leaves one or two, bract-like; flower large, much incurved from above the middle longitudinally; upper

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calyx-lobe short-pointed from between the summit of the adherent petals; lower calyx-lobes upwards very narrow, much pointed, reaching across and somewhat beyond the upper; labellum glabrous, gradually much narrowed upwards, its basal appendage brush-like; upper angle of the gynostemium-appendages ending in a minute pointed lobule; fruit rather slender. **P. acuminata.**

Labellum **hardly pointed or quite blunt** 1816

1816. Lower **calyx-lobes almost or quite surpassed by the upper, their free portion separated by a wide sinus.**

Often somewhat tall; basal leaves from lancelolar- to orbicular-ovate; stem-leaves one or two, bract-like; flower large, its stalklets soon elongated; upper calyx-lobe hardly pointed or somewhat blunt, about as long as the lower or somewhat longer; labellum linear-elliptical, glabrous, its basal appendage brush-like; upper lobule of the gynostemium-appendages very narrow and acute, the lower broadish, blunt and ciliolated; fruit rather slender. **P. curta.**

Lower **calyx-lobes considerably surpassing the upper, their free portion separated by a rather narrow sinus.**

Seldom tall; basal leaves from lanceolar- to roundish-ovate; stem-leaves one or two, clasping, almost bract-like; flower of moderate size, on a long stalklet, often anteriorely somewhat reddish; upper calyx-lobes simply acute; lower calyx-lobes almost setular upwards; labellum lanceolar-elliptical, glabrous, its basal appendage somewhat brush-like; both angles of the gynostemium-appendages pointed, more acutely the upper; fruit rather slender. **P. pedunculata.**

HYDROCHARIDEAE.

OTTELIA.

1817. Leaves **mostly floating, very firm, from narrow-elliptical to broad-ovate.**

Leaves somewhat succulent, their venulation reticular; flowers rather large, but of two sizes, those with smaller petals more copiously seed-bearing; involucre and calyx firm; petals upwards white; fruit nearly ovate; seeds ellipsoid. Figure 115. **O. ovalifolia.**

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VALLISNERIA.

1818. Leaves largely or totally submerged, somewhat transparent.

Leaves broad-linear, almost blunt, with any denticulation only at and near the summit; sepals of the staminate flowers minute, ovate-lanceolar, membranous; calyx-lobes of the pistillate flowers rather firm, lanceolar-ovate; stigmas sessile, cleft, subtile-papillular; fruit thinly cylindrical; seeds minute, ellipsoid. **V. spiralis.**

HALOPHILA.

1819. Leaves from narrow- to broad-elliptical, long-stalked.

Dwarf, submerged, creeping; leaves basal, transparent, entire, occasionally five times longer than broad; primary venules three, one carinular, two intra-marginal; secondary venules subtile, costular; anthers cordate-ovate, almost sessile; fruit ovate-ellipsoid, the surrounding calyx-tube pellucid; seeds almost globular.
(H. ovalis.) **H. ovata.**

ELODEA.

1820. Leaves usually from elliptical- to linear-lanceolar, often serrulated.

Much submerged, elongated, branched; leaves three or four or seldom more in the numerous whorls or some simply opposite, of tender texture; flowers solitary; the staminate on a short stalklet, the pistillate sessile; stamens and stigmas usually three; fruit slender; seeds few or several, ellipsoid, but the outer membrane slightly protracted at both extremities.
(Hydrilla verticillata.) **E. verticillata.**

IRIDEAE.

SISYRINCHIUM.

1821. Calyx-lobes and petals blue.

Often somewhat tall; leaves long, rather rigid, broad-linear, much pointed, mostly distichous-basal; floral leaves shortened; flowers rather large, in paniculated clusters, each lasting only one day; bracts broad, crowded, concealing the calyx-tubes; calyx-lobes and petals almost obovate; stamens and pistil shorter than the petals; filaments almost disconnected; fruit ellipsoid, somewhat angular; seeds brown. **S. cyaneum.**

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Calyx-lobes and petals white... 1822

1822. **Calyx-lobes as well as the petals ovate-elliptical and all of almost equal size.**

Dwarf; leaves comparatively short, rather lax, linear, acute, pointed, mostly distichous-basal; flowers small, on very thin elongated stalklets, in somewhat paniculated umbels or fascicles; bracts narrow; stamens and pistil about as long as the petals; filaments almost disconnected; style shorter than the stigmas; fruit small, nearly globular, slightly angular; seeds few in each fruit-cell, reddish-brown. **S. pulchellum.**

Calyx-lobes from linear- to elliptic-lanceolar, considerably smaller than the elliptical-obovate petals.

Rather tall; leaves long, somewhat flaccid, broad-linear, pointed, mostly distichous-basal; flowers rather small, in much paniculated umbels or fascicles; bracts narrow; stamens nearly as long as the petals; filaments connate towards the base; style hardly or considerably shorter than the stigmas; fruit globular-ovate, slightly angular; seeds several in each fruit-cell, reddish-brown. **S. paniculatum.**

PATERSONIA.

1823. **Quite glabrous** 1824

Somewhat beset with silk-like vestiture 1825

1824. **Stems abbreviated.**

Usually rather dwarf; stems leafless, hardly compressed; leaves rigid, greyish-green, narrow-linear, pointed, convex on both sides, usually much exceeding the stems; outer bract rigid, streaked; tube of the calyx upwards filiform, somewhat exserted; filaments connate towards the base; summit of style continuing erect; fruit slender. Figure 114. **P. glauca.**

Stems elongated.

Stems somewhat compressed, leafless; leaves firm, broad-linear, elongated, much pointed, flat, surpassed by the stems; outer bract rigid, pointed, almost smooth; tube of the calyx very slender, enclosed; summit of style soon turned downward; fruit slender. **P. longiscapa.**

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1825. Stem leafless.

Stems long, blunt-edged, silky-cottony towards the summit; leaves elongated, linear, pointed, flat, beset with short somewhat cottony vestiture on the edge; outer bracts rigid, acute, streaked, also somewhat invested; calyx-tube very slender, enclosed; summit of style soon turned downward; fruit narrowly trigonous-ellipsoid, somewhat beset with vestiture; seeds numerous, dark-brown, short-cylindrical, streaked. **P. sericea.**

Stem leafy below the middle.

Stem somewhat compressed; leaves in two rows, but spreading, flexile, elongated, narrow-linear, flat, very imperfectly beset with silky-cottony vestiture; outer bract rigid, much pointed, narrow in proportion to its length, slightly beset with silky-cottony vestiture; summit of style soon turned downward; fruit gradually attenuated at the base and apex; seeds numerous, rhomboid-ovate, angular, light-brown. **P. glabrata.**

DIPLARRHENA.

1826. Flowers large, unsymmetrical.

Comparatively tall; stem compressed, occasionally branched; perfect leaves mostly basal, narrow-ensate; flowers on conspicuous stalklets; lobes of the calyx petaloid, from orbicular- to cuneate-ovate, somewhat inflexed at the margin, the upper larger and more concave; petals about half as long as the calyx-lobes, not rarely violet-venuled and yellow towards the summit; stamen disconnected; third filament unprovided with an anther; fruit trigonous-ellipsoid; seeds brown, orbicular. **D. Moraea.**

AMARYLLIDEAE.

CALOSTEMMA.

1827. Flowers pink or purplish.

Seldom tall; bulb nearly globular; stem leafless, rather robust; leaves developed later than the flowers, few, broad-linear, of thick and somewhat succulent texture; flowers on conspicuous stalklets; calyx-tube narrowed downward, dilated again around the ovulary; calyx-lobes and petals cuneate-elliptical, deciduous; connecting membrane of the stamens ending often in denticles between the filaments; style capillary; stigma undivided; fruit small globular. **C. purpureum.**

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CRINUM.

1828. Lobes of the calyx from cuneate- to lanceolar-elliptical, shorter than the tube.

Tall; leaves comparatively broadish, lax; flowers the largest in the Victorian vegetation, somewhat greenish outside; calyx-tube long and very slender; stamens nearly as long as the petals or shorter; anthers comparatively short, oscillating; style longer than the stamens, ascending; stigma very small, undivided; fruit on a short stalklet. "Murray-Lily." Figure 116.

C. flaccidum.

HYPOXIS.

1829. Beset with hairlets.

Dwarf; vestiture of rather long soft scattered hairlets; bulb small; leaves all basal, from broadish- to narrow-linear, channelled, pointed, usually surpassing the stem; flowers one to five, rather small, somewhat greenish outside; calyx-lobes and petals of equal length, persistent, mostly lanceolar-elliptical; bracts one for each flower; anther-cells much divergent downward; style short; stigmas three; fruit nearly obovate-ellipsoid; seeds black.

H. hygrometrica.

Quite glabrous.

Very dwarf, occasionally somewhat taller; bulb very small, almost globular; leaves all basal, from broadish- to narrow-linear, channelled, pointed, usually surpassing the stem; bract large or small, distant from the flower or near it; flower one only, from small to almost minute, somewhat greenish outside; calyx-lobes and petals of equal length, from lanceolar- to narrow-elliptical, persistent; anther-cells throughout parallel; style short or almost obliterated; stigmas three; fruit from ellipsoid to almost globular; seeds black.

H. glabella.

LILIACEAE.

SMILAX.

1830. Leaves very firm, from lanceolar- to cordate-ovate, with usually five longitudinal venules.

Somewhat shrubby and prickly, quite glabrous; leaves on short stalks, of nearly equal green on both sides, sometimes assuming a slightly purplish hue, always quite entire; umbels mostly scattered; flowers small, greenish or slightly reddish, when in bud clavate-ellipsoid; sepals lanceolar-elliptical; petals slightly narrower; filaments from twice to four times as long as the anthers; fruit globular, black outside; seeds exteriorely reddish-brown, smooth. Figure 117.

S. Australis.

RHIPOGONUM.

1831. Racemes spike-like, glabrous, undivided.

Somewhat shrubby and prickly; leaves very firm, on jointed short stalks almost opposite or ternately whorled or some scattered, mostly from lanceolar to nearly ovate, with three or five longitudinal venules; flowers small, fragrant, somewhat distant; bracts minute; sepals and petals nearly ovate, of almost equal length, whitish, anthers curved-pointed; style very short, almost undivided, slightly surpassing the stamens; fruit globular, dark-red outside; seeds exteriorely brownish. **R. album.**

DRYMOPHILA.

1832. Fruit outside blue.

Never tall, branchless or scantily branched; leaves placed somewhat vertically, sessile, from linear to elliptical-lanceolar, finely venular-streaked, none near the root; the lowest leaves or leaf-stalks scale-like shortened; flowers small, on conspicuous stalklets, bractless, turned somewhat downward; sepals and petals membranous, spreading, white, deciduous; styles very short; stigmas revolute; fruit globular or somewhat ovate; seeds brownish, smooth, shining. **D. cyanocarpa.**

SCHELHAMMERA.

1833. Flowers often singly terminating the branches.

Dwarf, often diffuse, usually branched; root-fibres ending into very small tubers; leaves of thin texture, sessile, slightly clasping, from almost lanceolar to ovate, at the margin somewhat crisped; flowers on conspicuous stalks, bractless, occasionally two together; sepals and petals membranous, spreading, almost lilac, nearly lanceolar-elliptical, deciduous; stamens short; anthers dark-purplish; style longer than the stigmas; fruit globular, slightly three-lobed; seeds globular, their appendage depressed. **S. undulata.**

BURCHARDIA.

1834. Fruit sharply triangular, gradually much pointed.

Seldom tall; stem annual, usually branchless; leaves few, linear, the lower on a cylindric stalk, the upper shortened and clasping; umbels one or rarely two or three, supported by narrow and short bracts; flowers rather small, occasionally reduced to three or two; sepals and petals spreading, from lanceolar to almost elliptical, white or somewhat reddish-tinged, deciduous; anthers almost horizontal, either black-purplish or yellow; style very short; stigmas acute; fruit generally trigonous-ellipsoid, soon three-pointed; seeds many, small, brown. **B. umbellata.**

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WURMBEA.

1835. Sepals **and petals almost or entirely disconnected.**

Always dwarf and branchless; leaves two or three, filiform-linear, but—unless the lowest excepted—towards the clasping base dilated, the floral one sometimes bract-like shortened; flowers quite small, bractless, occasionally bisexual; sepals and petals persistent, from narrow- to ovate-elliptical, usually white, often with a reddish tinge and spotted across by a dark-purplish doubly glandular line below the middle; stamens short; styles disconnected; fruit from globular to ovate, somewhat trigonous; seeds many, brown, turgid-ovate or almost globular. Figure 118. **W. dioica.**

ASTELIA.

1836. Stem **always much exceeded by the basal leaves, often quite abbreviated.**

Rather dwarf and truly alpine, forming ample patches; silk-like vestiture extensive and copious; basal leaves from linear to elongate-lanceolar, rather crowded; stem-leaves only near the flowers and much shortened; panicle short, that of the pistillate flowers almost condensed into a cluster; flowers small; sepals and petals persistent, generally narrow-lanceolar; style obliterated; stigmas very short; fruit almost ellipsoid-ovate, red outside; seeds several, shining-black, somewhat angular. **A. alpina.**

XEROTES.

1837. Flowers **in whorls or clusters** 1838

Flowers **scattered** 1841

1838. Staminate **flowers in simple whorls.**

Often rather tall; leaves flat or channelled, blunt, longer than the stem; panicle occasionally reduced to a raceme; branches of the panicle whorled; bracts very short; sepals and petals equal in height; staminate calyx very gradually narrowed into a capillary conspicuous stalklet, somewhat purplish outside; pistillate calyx almost sessile; petals yellowish; fruit wrinkled; seeds trigonous-ovate. **X. Brownii.**

All **flowers in clusters** 1839

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1839. Clusters of flowers in a whorled panicle.

Tall; leaves long, tough, flat or channelled, from broad- to narrow-linear, always excised and sometimes additionally denticulated at the summit; flower-stem compressed; panicle with occasionally simply opposite branches or even reduced to a spike; primary bracts narrow, often elongated and pungent; sepals outside towards the summit brownish or sometimes blackish; petals yellow; stamens very short; style obliterated; fruit ovate-globular, smooth, pointed; seeds trigonous-ellipsoid. **X. longifolia.**

Clusters of flowers in a spike or headlet 1840

1840. Petals upwards bright-yellow.

Dwarf; leaves usually short, flat or channelled, often blunt, seldom twisted; bracts abbreviated; flowers quite small; clusters of staminate flowers arranged in a short usually interrupted and rarely ramified spike; clusters of pistillate flowers singly solitary; sepals and petals very small, blunt, somewhat succulent, equal in height, the sepals also yellow but sometimes purplish outside; stamens very short; fruit small, slightly wrinkled. **X. glauca.**

Petals upwards whitish.

Tall; leaves usually much elongated; clusters of flowers very dense, two or more separately superposed or sometimes singly solitary or occasionally forming a cylindric uninterrupted spike; bracts breaking up into capillary fringes; sepals and petals membranous, the latter slightly yellowish, downward connate into a tube, the sepals pellucid and but faintly colored; fruit smooth; seed trigonous-ovate. **X. leucocephala.**

1841. Flowers comparatively large.

Almost prostrate; leaves long, linear, channelled, excised and sometimes additionally denticulated at the summit; flowers in an almost sessile spreading panicle, fragrant, singly dispersed or less frequently two or three together; stalklets mostly very conspicuous; sepals and petals transparent, upward gradually much pointed; stamens very much shorter; fruit longitudinally somewhat streaked; seeds trigonous-ovate, brownish outside. **X. effusa.**

Flowers minute 1842

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1842. Petals dark-colored.

Leaves narrow- or channelled-filiform, streaked beneath; flowering stem slender and often short; flowers in a panicle or in a somewhat branched raceme; bracts all very small; fruit quite small, depressed-globular, smooth. **X. micrantha.**

Petals yellow.

Leaves very narrow, channelled or nearly flat, seldom somewhat filiform; flowering stem slender and often short; flowers in a panicle or in a somewhat branched raceme; stalklets usually conspicuous, recurved; sepals membranous, blunt, shining, pale at the margin, brownish towards the summit; petals without lustre, slightly succulent, nearly disconnected; fruit generally ovate-globular, smooth. **X. Thunbergi.**

XANTHORRHOEA.

1843. Tufty, comparatively dwarf, constantly trunkless, the spike rather thin and always short.

Leaves rather long, often somewhat channelled, the carinular angle very prominent; spikes shorter than their slender bractless stalks, generally several or many from each plant; floral bracts from cuneate- to filiform-linear, glabrous, enclosed; sepals short, hard, greenish, narrow, wider upwards; petals quite glabrous or at the summit slightly beset with hairlets, hardly longer than the sepals and thinner, dilated and whitish towards the upper end; stamens about half exserted; filaments white; style thin; stigma undivided; fruit somewhat exserted, short-pointed; seeds black outside. **X. minor.**

Comparatively tall, the trunk almost undeveloped or oftener conspicuously elongated, the spike rather thick and usually very long.

Trunk occasionally divided; leaves very long, slightly angular or flattened above, prominently angular beneath; spikes usually longer than their robust bractless stalks, generally one only from each tuft of leaves; sepals hard, pointed, glabrous; petals hardly longer than the sepals but thinner, whitish upwards and slightly beset with hairlets towards the summit; stamens usually less than half exserted; filaments white; fruit hardly emerged; seeds trigonous-ovate, black outside. **X. Australis.**

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EUSTREPHUS.

1844. Flower-stalklets from the axils of leaves.

Root-fibres ending into small tubers; leaves almost sessile, from broad-linear to lanceolar-ovate, dull-green beneath, without any distinct basal articulation, thus long persistent; flowers rather small, their stalklets jointed towards or near the middle, often rather long; sepals and petals dull-purplish or pale-pink, deciduous; filaments wholly connate into a membranous tube; anthers conniving; style filiform; fruit rather large, almost globular, brownish-yellow or orange-colored outside; seeds numerous, externally black, shining, provided with a small appendage. **E. Brownii.**

GEITONOPLESIUM.

1845. Flowers in stalked cymes or umbels.

Minutely and scantily prickly; leaves on very short stalks, with a basal articulation, thus readily seceding, very shining, from broad-linear to lanceolar-ovate, their venulation subtile; cymes often paniculate; flowers rather small, their stalklets unjointed near the middle, often rather short; sepals and petals often greenish, deciduous; filaments disconnected; anthers conniving; style filiform fruit almost globular, bluish-black outside, nearly indehiscent; seeds several, externally shining-black.

(Calcoa cymosa.) **G. cymosum.**

DIANELLA.

1846. Stem leafy along its lower portion.

Leaves long, broad-linear, nearly flat, rough at the margin and carinular angle, when along the stem distichous, when terminating branches fascicular; clasping leafstalks closed; stalklets often shorter than the flowers, the latter somewhat pendent; anthers very narrow, pale-yellow, twice or three times as long as the thickened orange-colored portion of the filament; style filiform; stigma minute; fruit nearly globular; seeds few or several, shining-black outside. **D. coerulea.**

Stem almost leafless 1847

1847. Leaves comparatively broad, rough at the margin.

Leaves very rigid, almost ensate, hardly recurved along the margin, there as well as on the carinular angle rough; clasping leafstalks closed, compressed; sepals and petals from the down-bent flowers soon verging towards the

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stalklet; anthers yellow, broadish, hardly as long as the large thickened orange-colored portion of the filament or shorter; style filiform; stigma minute; fruit rather large, from globular- to cylindric-ovate; seeds few or several, shining-black outside. **D. Tasmanica.**

Leaves comparatively narrow, smooth at the margin 1848

1848. Anthers yellow.

Leaves long, nearly flat; clasping leafstalks quite opened towards the summit, posteriorely almost blunt; sepals and petals of the down-bent flowers soon verging towards the stalklet; anthers about twice as long as the small orange-colored thickened portion of the filament; style filiform; stigma minute; fruit nearly globular; seeds few or several, shining-black outside. **D. longifolia.**

Anthers almost black.

Leaves long, very rigid, soon recurved or revolute along the margin; clasping leafstalks closed; anthers three or more times as long as the small thickened bright-yellow portion of the filament; style filiform; stigma minute; fruit nearly globular; seeds few or several, shining-black outside. **D. revoluta.**

BULBINE.

1849. All filaments beset with hairlets.

Root bulbous-tuberous; leaves usually rather thick, all basal; flowers comparatively large, fragrant; bracts small; filaments from very partially to quite extensively invested; style filiform; stigma minute; fruit small, globular; seeds few, black outside. **B. bulbosa.**

Three of the filaments quite glabrous.

Root entirely fibrous; leaves usually rather slender, all basal; flowers comparatively small; bracts very short; style filiform; stigma minute; fruit small, globular; seeds few, black outside. **B. semibarbata.**

TRICORYNE.

1850. Stem branched.

Almost ever-flowering; root procurrent, fibrous; stem and branches wiry; leaves distantly scattered, flaccid, the upper gradually bract-like; umbels more than one, with few or several flowers; sepals and petals almost alike, quite yellow or outside partly reddish; style filiform; stigma minute; fruitlets very small, oblique- or clavate-ovate, one-seeded. **T. elatior.**

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Stem unbranched.

Leaves lax, grass-like; umbel singly terminal, with many flowers; sepals and petals almost alike, quite yellow or outside partly reddish; style filiform; stigma minute; fruitlets very small, one-seeded. **T. simplex.**

STYPANDRA.

1851. Leaves in two rows along the stem and branches.

Often tall, somewhat woody at last; branches often somewhat twisted; leaf-stalks closed; leaves numerous, broad-linear, acute, somewhat curved, the floral leaves much shortened; flowers on recurved stalklets, in an often elongated panicle; sepals and petals acute, always blue; upper portion of the filaments tumid from yellow densely approximated papillular hairlets, lower portion glabrous; fruit small, almost ellipsoid; seeds several or many, nearly ovate-ellipsoid, outside dull-black.
S. glauca.

Leaves nearly all basal.

Leaves broad-linear, their stalks opened; floral leaves much shortened; flowers on straight stalklets, often umbellate-corymbous, occasionally only two together or solitary from their axil; sepals and petals almost blunt, inside blue or pale-yellowish; filaments in their whole length beset with yellow extremely short papillular hairlets; fruit somewhat ellipsoid; seeds compressed-ellipsoid, outside shining-black. **S. caespitosa.**

ARTHROPODIUM.

1852. Hairlets of stamens quite along and around the upper part of the filaments 1853

Hairlets of stamens restricted to two short protrusions from near the base of the anthers 1854

1853. Comparatively tall.

Root-fibres elongated, ending in slender tubers; leaves broad-linear, mostly basal; panicle often amply branched; flowers rather small; stalklets jointed towards their upper end, soon bent downward; bracts short; sepals and petals long-persistent, purplish, occasionally quite pale or even whitish, the latter broader and somewhat crisped, about as long as the stamens; filaments longer than the elliptic anthers, only towards the base glabrous; fruit small, globular; seeds several, angular, black outside. **A. paniculatum.**

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Comparatively dwarf.

Root-fibres abbreviated, ending in small slender tubers; leaves narrow-linear; flowers quite small, in a simple or hardly branched raceme; sepals and petals purplish; filaments longer than the ovate anthers; its hairlets yellowish; fruit quite small, globular; seeds few. (Probably a variety of the preceding.) **A. minus.**

1854. Fruit-bearing stalklets almost erect.

Root-fibres ending in somewhat turgid tubers; leaves almost all basal; panicle scantily branched; flowers rather large, fragrant; stalklets often scattered; bracts conspicuous; sepals and petals purplish, the former acute, the latter obtuse and somewhat crisped; stamens considerably shorter than the sepals and petals; anthers longer than the filaments, almost linear, usually dark-colored; style filiform; stigma minute; fruit rather small, globular; seeds several, black outside. **A. strictum.**

Fruit-bearing stalklets reflexed.

Root-fibres ending in somewhat turgid tubers; leaves almost all basal; panicle scantily branched; flowers rather large, fragrant; stalklets often two or more together; bracts conspicuous; sepals and petals purplish, the former acute, the latter obtuse and slightly fringy; stamens considerably shorter than the sepals and petals; anthers longer than the filaments, almost linear, usually yellow; style filiform; stigma minute; fruit rather small, globular; seeds several, black outside.

(A. laxum.) **A. fimbriatum.**

THYSANOTUS.

1855. Twining.

Dwarf; root-fibres tuberously thickened; stem branched; basal leaves few, very short, channelled, linear; upper leaves rudimentary or nearly obliterated; flowers rather small, solitary or two together; bracts quite short; sepals narrow, firm, in part greenish; petals broad, tender, membranous, extensively purplish; anthers six, very slender; style filiform; stigma minute; fruit quite small, trigonous-globular; seeds few, black outside.

T. Patersoni.

Erect **1856**

1856. Stem much branched from near the base.

Often rather tall and rigid; root irregularly thickened, its fibres without tubers; basal leaves somewhat short, linear or nearly obliterated or very fugacious; lowest

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branches often flowerless; flowers intricate-paniculated; bracts quite short; sepals narrow, firm, acute, in part greenish; petals broad, obtuse, extensively purplish, tender membranous; anthers six, particularly slender upwards; fruit small, globular; seeds few, black outside. **T. dichotomus.**

Stem unbranched in its lower portion 1857

1857. Flowers in an interrupted seldom divided raceme.

Dwarf; root-fibres tuberously thickened towards the outer end; leaves all basal, linear, abbreviated, flaccid, fugacious; stalklets two or three together or umbellately more, often quite short; sepals narrow, firm, acute; petals broad, obtuse, tender-membranous, extensively purplish; anthers six, slender particularly upwards; seeds few, black outside. Figure 119. **T. Baueri.**

Flowers in a panicle.

Often rather dwarf; root-fibres tuberously thickened towards the outer end; basal leaves usually elongated, flaccid, linear, somewhat channelled; stalklets solitary or from two to four together; sepals narrow, firm, acute, in part greenish; petals extensively purplish, broad, obtuse, tender-membranous; anthers six, slender particularly upwards; fruit small, almost globular; seeds few, black outside. **T. tuberosus.**

HERPOLIRION.

1858. Flowers almost sessile between the short rigid leaves.

Leaves linear, acute, somewhat distichous; sepals and petals elongated, persistent, bluish particularly inside; the former lanceolar-linear; the latter almost elliptic-linear; anthers narrow, yellow; style filiform, rather long; stigma minute; fruit very small, globular; seeds several, somewhat ellipsoid. **H. Novae Zelandiae.**

SOWERBAEA.

1859. Sterile filaments present between the antheriferous stamens.

Never tall; stem branchless and bractless; leaves almost filiform, somewhat rigid; umbel many-flowered; bracts small, but forming an involucre; stalklets short; flowers rather small; sepals slightly pointed; petals blunt; anthers less than half as long as the sepals and petals; fruit very small, globular; seeds slightly rough, black outoutside. **S. juncea.**

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CASSIA.

1860. Flowers blue.

Seldom tall; tubers turgid; leaves rather broadly linear, lax, mostly basal; flowers generally somewhat pendent, small, irregularly compound-racemous; stalklets two or more together; filaments often blue at the middle; fruit small, somewhat depressed; seeds rough, black outside, their appendage pale. **C. vittata.**

Flowers pale.

Tubers slender; leaves rather narrowly linear, lax, mostly basal; flowers very small, in a scantily or hardly divided raceme; fruit quite small; seeds black outside, their appendage pale. **C. parviflora.**

CHAMAESCILLA.

1861. Stem up to the inflorescence undivided.

Leaves often shorter than the stem; inflorescence occasionally reduced to two flowers or one, rarely with numerous flowers; producing rather long stalklets; sepals and petals blunt, tender, considerably longer than the stamens; fruit small, upwards broader; seeds shining-black.
C. corymbosa.

CORYNOTHECA.

1862. Ramification almost wiry and often dichotomous.

Desert-plant; basal leaves short, linear, fugacious; upper leaves distant, bract-like; flowers bending downward, their stalklets very short; fruitlets very small, from ovate- to clavate-ellipsoid; seeds shining-smooth, as well as their appendage black. **C. lateriflora.**

BARTLINGIA.

1863. Flower-headlets on much elongated terminal stalks.

Never tall; stem thin but rigid, branched; leaves somewhat fasciculated, thinly filiform, pointed, shining, the lower rather long; leaf-stalks membranously dilated and somewhat fringed; headlets almost hemispherical, involucrated by bracts; sepals and petals persistent, the latter less shining and somewhat longer; anthers roundish; style very short; fruit quite small, ovate-globular, short-pointed; seeds several, angular, black outside.
B. gracilis.

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Flower-headlets on very short stalks.

Very dwarf, hardly erect, well branched; some scattered fulcrating rigid root-fibres partly above the ground, originating occasionally far up on the stem; leaves often fascicular, quite short, trigonous-filiform, almost acicular, often somewhat curved and rough; stipular expansions of the leaf-stalks fringed; headlets very small, on generally recurved stalks; outer bracts blunt; flowers occasionally reduced to two or one; sepals and petals transparent; anthers roundish, purplish-black; fruit globular-ovate, slightly trigonous; seeds usually three, black outside, without any lustre. **B. sessiliflora.**

CALECTASIA.

1864. Branches hard, closely beset with rigid pungent leaves.

Root-fibres rigid; leaves from their clasping persistent stalk soon spreading or remaining appressed, somewhat trigonous, occasionally beset with minute hairlets; flowers sessile; lower portion of the calyx tubular, densely beset with appressed hairlets; calyx-lobes and petals almost narrow-lanceolar, somewhat elastic, outside imperfectly invested, occasionally purplish; filaments hardly as long as the conniving anthers or shorter; style capillary-filiform; stigma minute; fruit glabrous, narrow-ellipsoid, pointed, enclosed in the calyx-tube; seeds about three times longer than broad. **C. cyanea.**

ALISMACEAE.

ALISMA.

1865. Fruitlets several or many, smooth.

Usually tall; leaves large, long-stalked, from lanceolar- to elliptic- or cordate-ovate, their primary venules five to nine, longitudinal, their secondary venules transverse; flowers rather small, in paniculate whorls; sepals rather firm; petals larger, very tender, often somewhat pink; fruitlets quite small, almost obovate, much compressed. **A. Plantago.**

DAMASONIUM.

1866. Fruitlets normally nine.

Usually dwarf; leaves rather small, conspicuously stalked, from cordate-ovate to lanceolar, their primary venules three or five, longitudinal; their secondary venules transverse; flowers quite small, whorled in an usually short panicle; sepals shorter and firmer than the petals; fruitlets semilanceolar-deltoid. Figure 121. **D. Australe.**

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PHILHYDREAE.

PHILHYDRUM.

1867. Sepals much longer than the petals.

Leaves narrow-ensate, passing gradually into their much compressed stalks, the uppermost shortened into bracts; spike occasionally branched; flowers comparatively large, bending their bract downward; spike somewhat interrupted; bracts exceeding the flowers, much pointed; sepals and petals yellow; fruit ellipsoid; placentaries fixed to the walls of the fruit-cells; seeds numerous, minute, ovate-ellipsoid. **P. lanuginosum.**

XYRIDEAE.

XYRIS.

1868. Paired sepals hardly keeled.

Rather tall, quite slender; leaves often somewhat twisted, narrow-linear; flower-headlets rather small, usually ellipsoid-ovate; bracts scarcely seriated, dark, but paler towards the middle; flowers few; base of the petals very narrow; stigmas undivided; fruit without any prominent dissepiments; placentaries very short, almost disunited; seeds numerous, minute, ellipsoid. Figure 122.

X. gracilis.

Paired sepals distinctly keeled.

Rather tall; leaves long, hardly ever twisted, compressed-filiform; flower-headlets usually globular-ovate, their axis elongated; bracts dark, lax, irregularly arranged in five rows, glabrous, soon torn at the margin, the lower empty and gradually smaller; petals orbicular-obovate; stigmas globular; fruit bursting transversely, producing three imperfect dissepiments; placentaries highly extended, downward somewhat united; seeds numerous, minute.

X. operculata.

TYPHACEAE.

TYPHA.

1869. Upper spike often conspicuously separated from the lower.

Quite tall, unbranched; leaves of soft texture, very long, but narrow, plan-convex, blunt, without any prominent venulation; both spikes usually much elongated, but the lower occasionally interrupted, the upper externally yellowish, the other externally brown, both on the same rhachis; sepals and petals pappus-like; stamens usually three, somewhat connate; stigma unilateral; fruit quite concealed, oblique, narrowed into a stalk-like base.

T. angustifolia.

SPARGANIUM.

1870. Inflorescence branchless or scantily branched.

Generally riparian, rather dwarf or somewhat tall; leaves broad-linear, keeled, the lower much elongated, the floral leaves gradually more abbreviated; headlets several or many, sessile, rather distant along the flexuous upper portion of the stem; stamens three or more, surpassing the sepals and petals; anthers many times shorter than the filaments; stigma unilateral, elliptical- or linear-lanceolar, occasionally doubled; fruits small, globular- or ellipsoid-obovate, pointed by the persistent style.

S. angustifolium.

LEMNACEAE.

LEMNA.

1871. Root-fibre one only 1872

Root-fibres two or more 1873

1872. Fronds almost lanceolar, submerged.

Fronds quite small, membranous, transparent, finally stalked, slightly serrulated towards the upper end, often crosslike-coherent through new shoots, and occasionally connected into extensive masses; fruit one-seeded.

L. trisulca.

Fronds from elliptic to ovate, floating.

Fronds minute, firm, almost flat; shoots sessile, soon detached; fruit one-seeded. "Duck-weed." **L. minor.**

1873. Root-fibres two or few.

Fronds floating, very small, from elliptic to ovate, slightly convex underneath; shoots sessile, soon detached; fruit unknown. **L. oligorrhiza.**

Root-fibres several.

Fronds floating, firm, comparatively conspicuous, roundish-ovate, somewhat convex on both sides, purplish underneath; shoots sessile, soon detached; fruit imperfectly known, two-seeded. **L. polyrrhiza.**

WOLFFIA.

1874. Fronds extremely minute, but very convex underneath.

Increasing readily by offshoots; fronds rather solid, sonorous when touched in masses; anther sessile; fruit one-seeded.

W. Michelii.

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FLUVIALES.

TRIGLOCHIN.

1875. Annual 1876

Perennial 1877

1876. Flowers **minute, with very slender pistils.**

Very dwarf and thin; leaves almost setular-linear; lower flowers in the spike often with three sepals and one stamen only; terminal flower with six stamens; fruitlets longitudinally adnate, very narrow, three fertile and bidenticulate at the base. **T. centrocarpa.**

Flowers **rather small, with comparatively thick pistils.**

Rather dwarf; leaves filiform; lower flowers in the spike mostly with one stamen only; terminal flower with three stamens; fruitlets six, longitudinally adnate, alternately sterile and fertile, the latter truncate and terminated by the spreading style. **T. mucronata.**

1877. Somewhat **tall, quite slender.**

Root producing offshoots; leaves filiform-linear; flowers generally numerous, with three stamens; fruitlets six, three sterile and three fertile, placed alternately, the latter oblique-orbicular, dorsally streaked. **T. striata.**

Usually **tall and robust.**

Root producing tubers; leaves very long and proportionately broad, somewhat succulent, sometimes floating; spike quite long; flowers numerous, comparatively large; fruitlets usually six, all fertile, from almost orbicular to occasionally obliquely lanceolar-ellipsoid, adnate only towards or at the base, often somewhat twisted. **T. procera.**

POTAMOGETON.

1878. Leaves **of two very distinct forms** 1879

Leaves **all alike or similar in form** 1880

1879. Floating **leaves firm.**

Leaves all scattered and stalked; floating leaves from cordate- to elliptic-ovate; submerged leaves membranous, narrow-lanceolar, quickly decaying; stipules long-pointed; stalks of the spikes rather thick; fruitlets comparatively large, when fresh at the outer margin blunt, their style very short. **P. natans.**

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All leaves membranous.

Leaves all scattered and short-stalked; floating leaves from cordate- to elliptic-ovate; submerged leaves almost lanceolar; stipules blunt; stalks of the spikes slender; fruitlets comparatively small, when fresh at the outer margin blunt, their style obliterated. **P. plantagineus.**

1880. **Leaf-stalks none or unclasping** 1881

Leaf-stalks elongated, almost cylindrically clasping ... 1885

1881. **Leaves much crisped.**

Branches compressed; leaves all submerged, membranous, transparent, from linear- to oval-elliptical, the upper opposite; flowers few in the spikes; fruitlets compressed, terminated by the conspicuous style, when fresh at the outer margin blunt. **P. crispus.**

Leaves almost flat 1882

1882. **Leaves distinctly stalked.**

Leaves all submerged, rather large, membranous, transparent, shining, from ovate- to elongate-lanceolar, pointed, slightly serrulate; stipules conspicuous; stalks of the spikes thickened upwards; fruitlets when fresh slightly angular at the outer margin. **P. lucens.**

Leaves quite sessile 1883

1883. **Leaves from ovate- to orbicular-cordate.**

Leaves all submerged, membranous, transparent, clasping at the base, slightly rough at the margin, the upper opposite; stalks of the spikes hardly thickened upwards; fruitlets compressed, when fresh blunt at the outer margin. **P. perfoliatus.**

Leaves elongate-linear 1884

1884. **Leaves rounded-blunt.**

Branches considerably compressed; leaves all submerged, scattered except the uppermost, membranous, transparent; their longitudinal venules three to five; stipules obtuse; flowers usually several in the spike; fruitlets curved-attenuated at the summit, bluntly angular at the outer margin, their style almost straight.

(P. ochreatus.) **P. obtusifolius.**

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Leaves sharp-pointed.

Branches strongly compressed; leaves all submerged, membranous, transparent, scattered except the uppermost, their longitudinal venules five or more; stipules acute; flowers usually few in the spike; fruitlets straight-attenuated at the summit, prominently angular at the outer margin, their style recurved. **P. acutifolius.**

1885. **Fruitlets conspicuously longer than broad.**

Branches thread-like; leaves all scattered, submerged, narrow-linear, pointed; flowers usually few and somewhat separated in the spikes; fruitlets when dry almost semiorbicular and then prominently biangular near the outer margin, their style almost terminal.
P. pectinatus.

Fruitlets hardly longer than broad.

Branches thread-like; leaves all submerged, thinly linear-filiform; flowers in the spikes often somewhat whorled; fruitlets very small, when dry almost orbicular, but laterally truncate, blunt at the outer margin, their style distinctly lateral. **P. filiformis.**

POSIDONIA.

1886. **Connective of the anthers gradually pointed.**

Submerged stem and branches long, in their lower portion much beset with the fibrous remnants of decayed foliage; leaves firm, broad-linear, rounded-blunt, shining, their venules numerous, subtile; spikes approximated, jointly stalked; flowers quite small, few or several in each spike; sepals from ovate to orbicular, fixed beyond their base; connective much longer than the anther cells; stigma capillary-tufted; fruitlet lanceolar-ellipsoid, oblique, carnulent, without any stalk-like basal elongation, large-seeded. **P. Australis.**

RUPPIA.

1887. **Stalk-like elongations thin, but rigidly straight, much longer than the fruitlets.**

Submerged, preferring brackish waters; stem and branches very slender, often elongated; leaf-stalks clasping, somewhat turgid; leaves rather long; anthers almost sessile, their lobes from ellipsoid to globular; fruitlets turgid towards the base, much attenuated towards the almost pointed summit. **R. maritima.**

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ZOSTERA.

1888. Flowers provided each with a bract.

Maritime, creeping; leaves comparatively short, narrow-linear, truncate or excised at the upper end, with only one conspicuous longitudinal venule; stalk of the inflorescence filiform; clasping stalk of the floral leaf rather short; flowers few, extremely small, both kinds alternating in two rows on their membranous rhachis; anther narrow, one-celled; fruits very minute, ellipsoid; seed dark. **Z. nana.**

Flowers unprovided with bracts.

Maritime, creeping; stems compressed; leaves broadish-linear, comparatively long, rounded-blunt at the upper end, with only one conspicuous longitudinal venule; clasping stalk of the floral leaf rather long; flowers many, both kinds alternating in two rows on their membranous rhachis; bracts exceptionally and then only scantily developed; fruits minute, ellipsoid; seed pale. **Z. Tasmanica.**

NAJAS.

1889. Leaves very narrow, minutely denticulated.

Leaves rather short, their stalks clasping, provided with stipular appendages; flowers minute; style one; stigmas two, capillary; fruit very small, sessile, cylindric-ellipsoid, its envelope bract-like. **N. tenuifolia.**

ALTHENIA.

1890. Flower-stalks very short.

Stem and branches threadlike-thin; leaves rather short, their stalk clasping, the floral leaves reduced to bracts and almost opposite; flowers somewhat spicate, distant; anthers almost sessile, two-celled; styles conspicuous, thin, as well as the stigmas solitary, the latter almost ovate, concave; fruitlets very small, raised on stalk-like bases, obliquely narrow-ellipsoid. Figure 120.
(Lepilaena Preissii.) **A. Preissii.**

CYMODOCEA.

1891. Leaves almost semicircularly excised at the summit.

Propagation mainly by leafy buds; stems and branches elongated; leaves rather long, broad-linear, quite firm; flowers very small, concealed by the clasping appressed leaf-stalks; united filaments very thin; fruitlets terminated by the persistent style and stigmas.
C. zosterifolia.

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PALMAE.

LIVISTONA.

1892. Leaves **almost fan-like in outline and folds.**

Finally very tall; trunk quite straight; leaves very large, terminally crowded, long-stalked, rigid, deeply lobed, each lobe narrow and again short-bifid, the lobules acute; panicle very ample, glabrous, bent downward; flowers unprovided with stalklets; petals somewhat carnulent, yellowish, longer than the stamens; fruitlet globular, dark-colored outside. **L. Australis.**

JUNCEAE.

LUZULA.

1893. Seeds **provided with a basal funicular appendage.**

Never tall; leaves flat, flaccid, mainly basal, sparsely beset with scattered long hairlets, but getting occasionally glabrous in age; flowers quite small, in paniculate or umbellate or sometimes crowded clusters; bracts short, scarious; sepals and petals longer than the fruit, gradually pointed, variously brownish, often pale-margined; filaments considerably shorter than the anthers; fruit quite small, one-celled, its vertex blunt; seeds basal, ovate-globular. **L. campestris.**

JUNCUS.

1894. Annual.

Dwarf, often of a rather pale or somewhat reddish hue; stem thin, branched, scantily leafy; leaves narrow-linear, channelled, pointed; flowers scattered or two or few together, arranged in a cyme, occasionally only one on a whole plant, mostly unprovided with stalklets, often cleistogamous; bracts broadish; sepals and petals much pointed; stamens three or oftener six; fruit narrow-ellipsoid, quite blunt, three-celled, considerably shorter than the sepals and petals, often reddish; seeds globular-ovate, without any appendage. (Probably immigrated.) **J. bufonius.**

Perennial 1895

1895. Stems **branchless** 1896

Stems **branched** 1904

1896. Leaves **flat** 1897

Leaves **channelled- or filiform-cylindrical** 1899

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1897. Leaves rather rigid.

Alpine, never tall; root producing offshoots; stems compressed; leaves nearly all basal, somewhat sickleshaped-linear, streaked; flowers crowded into an usually solitary terminal capitular cyme; bracts short, largely dry and colorless; sepals more acute than the petals; stamens six; fruit dark-brown, three-celled, blunt; seeds ellipsoid. **J. falcatus.**

Leaves quite flaccid 1898

1898. Leaves broad-linear.

Never tall, simply tufted; leaves all basal, much like those of grasses; flower-clusters in unequally compound spreading terminal cymes; sepals and petals very small, brown; stamens three; fruit ovate-ellipsoid, three-celled, somewhat pointed; seeds without any appendage. **J. planifolius.**

Leaves narrow-linear.

Never tall, simply tufted; stems very slender; leaves all basal, much like those of grasses, but towards the summit somewhat channelled; flower-clusters in terminal spreading cymes; sepals more pointed than the petals; stamens six; fruit rather blunt, three-celled; seeds without any appendage. **J. caespititius.**

1899. Leaves channelled 1900

Leaves filiform-cylindrical 1901

1900. Flowers dispersed.

Usually dwarf; root producing conspicuous offshoots; stems somewhat compressed; leaves rigid, channelled-linear; the floral leaves almost bractlike-shortened; flowers almost spicate, in a dichotomous cyme or small panicle, sometimes reduced to few; sepals and petals slightly pointed; stamens six; fruit ovate-ellipsoid, three-celled, slightly exserted; seeds without any appendage. Figure 123. **J. Brownii.**

Flowers clustered.

Usually dwarf; root producing hardly any offshoots; stems much compressed; leaves rigid, almost semicylindric; flower-clusters in a slightly branched leafy cyme; sepals and petals much pointed; stamens six; fruit ovate-ellipsoid, three-celled, shorter than the sepals and petals; seeds without any appendage. **J. homalocaulis.**

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1901. Seeds with appendages at both ends.

Tall, one or two or few basal leaves stem-like, pungent, the others rudimentary; main floral leaf erect, pointed, continuing the stem, dilated at the base; flower-clusters in an almost terminal irregularly compound cyme; sepals more pointed than the petals; stamens six; filaments flat; fruit ellipsoid but pointed, three-celled, as long as the sepals and petals. **J. maritimus.**

Seeds **without any appendages** 1902

1902. Flowers rather pale-colored.

Usually tall, almost leafless or some basal leaves stem-like; main floral leaf erect, pungent, continuing the stem; flowers scattered, in an irregularly compound almost lateral cyme; sepals and petals pointed; stamens usually three; fruit obovate-ellipsoid, three-celled, about as long as the sepals and petals. **J. pallidus.**

Flowers **rather dark-colored** 1903

1903. Flowers usually quite numerous.

Tall, almost leafless or some basal leaves stem-like; main floral leaf erect, continuing the stem; flowers either scattered or much clustered in a nearly lateral irregularly compound cyme; sepals and petals much pointed, occasionally pale-colored; stamens generally three; style extremely short; fruit obovate-ellipsoid, slightly impressed at the summit, shorter than the sepals and petals or nearly as long, three-celled; seeds ellipsoid. **J. communis.**

Flowers usually rather few.

Rather tall, almost leafless or seldom few basal leaves stem-like; stems particularly slender; main floral leaf continuing the stem; flowers very small, in a nearly lateral cyme, mostly scattered, seldom many; sepals and petals pointed; stamens generally six; fruit ovate-ellipsoid, slightly exserted, three-celled. **J. pauciflorus.**

1904. Somewhat tall, with numerous clusters of many flowers each.

Lax; root producing offshoots; stem compressed; leaves several, scattered, compressed-filiform, imperfectly jointed, extensively hollow, placed vertically; sepals and petals much pointed; flower-clusters in a terminal cyme; stamens usually three; fruit almost one-celled, somewhat exserted, narrow, angular; seeds without any appendage. **J. prismatocarpus.**

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Quite dwarf, with several clusters of few flowers each.

Alpine or subalpine, dwarf; root producing offshoots; leaves subulate-linear, somewhat jointed; flower-clusters in a simple terminal cyme or reduced to three or two or even one; stamens usually six; filaments longer than the anthers; fruit three-celled, rather longer than the sepals and petals, gradually much attenuated towards the summit; seeds without any appendage. **J. pusillus.**

ERIOCAULEAE.

ERIOCAULON.

1905. Pistillate flowers provided with sepals and petals.

Dwarf; stems undivided; leaves all basal, soft, short, broad-linear, pointed, the cellules of their tissue very conspicuous; headlets globular; involucrating bracts almost ovate, quite small; floral bracts ciliolated; sepals and petals beset with hairlets at the summit, there bearing a glandule and often dark-colored; stamens six; stigmas three; fruit minute, three-celled; seeds normally three. **E. Smithii.**

Pistillate flowers without sepals and petals.

Quite dwarf; stems slender, undivided; leaves all basal, soft, short, broad-linear, pointed, the cellules of their tissue very conspicuous; headlets very small, globular; involucrating bracts almost lanceolar, rather dark-colored; sepals of the staminate flowers coherent at the base; petals connate into a tube, glabrous, bearing a glandule at the summit; stamens six; stigmas three; fruit minute, three-celled; seeds normally three.
E. electrospermum.

RESTIACEAE.

TRITHURIA.

1906. Delicate, almost transparent, often of reddish hue.

Glabrous; often submerged; leaves all basal, very narrowly linear, pointed; headlets of flowers singly terminal; involucral bracts often lanceolar; flowers centrifugal-developed; anther ellipsoid; style none; stigmas capillary; fruit very minute, trigonous-ovate, usually one-seeded, its three or occasionally two valves separating from the narrow interstices. **T. submersa.**

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APHELIA.

1907. Floral bracts narrowly membranous at the margin.

Very dwarf; leaves often shorter than the stem; spikelet compressed, mostly reclining; bracts often beset with minute hairlets, the lowest much longer than the next and only that one pointed; flowers mostly unisexual, reduced to a single stamen or single pistil, stamen besides supported by a colorless pellucid inner bract or sepal; anther narrow; stigma hardly broader than the style; fruit almost ellipsoid. **A. gracilis.**

Floral bracts broadly membranous at the margin.

Extremely dwarf; leaves almost as long as the stem; spikelet mostly erect, much compressed, broadish, beset with short hairlets; the lowest bract hardly longer than the next, all bracts pointed; stamens and pistils each clasped by an inner colorless sepalaceous bract and externally supported by as many floral bracts; stigma narrow; fruit almost ellipsoid. **A. pumilio.**

CENTROLEPIS.

1908. Glabrous 1909

Beset **with hairlets** 1911

1909. Spikelet very narrow.

Quite minute, somewhat rigid, sometimes of a reddish tinge, resembling a branchless slender moss; leaves almost setular; outer floral leaf bract-like and often somewhat recurved in its upper portion; spikelet containing several or many or even very numerous flowers, only the lowest staminate; pistils extensively coherent or connate, each representing a flower or regardable as component parts of a single flower; fruits very minute. **C. polygyna.**

Spikelet **rather broad** 1910

1910. Floral leaves abbreviated.

Minute; leaves almost capillary; floral leaves bract-like, capillary-pointed, thus almost awned; spikelet containing several flowers, only the lowest staminate; stigma very narrow, elongated; base of fruit stalk-like. **C. glabra.**

Floral leaves elongated.

Stems compressed; leaves narrow-linear, rather firm; floral leaves two, similar to the others but shorter, particularly the second; spikelet containing several or many flowers;

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inner bracts few, colorless and transparent; pistils in two rows, somewhat coherent; stigma elongated, hardly broader than the style; fruits ellipsoid, their base stalk-like. **C. aristata.**

1911. Floral leaves long-pointed.

Stems very thin, rather short; leaves extremely narrow, forming tufts; floral leaves two, broadish, clasping and then suddenly filiform-narrowed; spikelet broad; flowers few or several; inner bracts few, colorless, supporting nearly as many stamens and pistils; fruits generally few, their base stalk-like. **C. fascicularis.**

Floral leaves short-pointed.

Stems very thin, quite short; leaves extremely narrow, forming tufts, much shorter than the stems; floral leaves two, changed into bracts, broadish, clasping, acuminated; spikelet broad; flowers several or many; inner bracts few, colorless, supporting only partially the stamens and pistils, often blunt and torn; fruits usually several, through torsion strongly connected; ripe seeds obovate-ellipsoid, their base stalk-like. **C. strigosa.**

LEPYRODIA.

1912. Rudimentary leaves reflexed.

Somewhat tall; branches weak, sometimes flexuous; leaves very minute, occasionally deficient; flower-fasicles distant in a simple spike; bracts pale-brownish, partly crowded, but without any spicular arrangement; staminate and pistillate flowers on distinct plants; sepals of the staminate flowers shorter than the petals; style obliterated; fruit trigonous. **L. interrupta.**

Rudimentary leaves erect 1913

1913. Stems distinctly branched.

Somewhat tall, often lax, sometimes quite bent down; branches slightly rough; leaves very minute, their clasping stalks often close; bracts partly approximated, but without any spicular arrangement; flowers in small panicles; staminate and pistillate flowers on the same plant; sepals of the staminate flowers shorter than the petals, three each, gradually much pointed, style obliterated; fruit trigonous. **L. Tasmanica.**

Stems almost branchless.

Somewhat tall; leaves minute, appressed; flowers in small often contracted panicles; staminate and pistillate flowers on the same plant; sepals somewhat longer than the petals, all acute; fruit trigonous. **L. Muelleri.**

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RESTIO.

1914. Stems much compressed.

Seldom tall; stems undivided; leaf-stalks closely clasping, only partly open, occasionally bearing a short leaf, sometimes along the stem undeveloped; spikelets in a simple panicle or raceme, rarely reduced to two or one; floral bracts pointed; sepals, petals and stamens two each; anthers pointless; styles disconnected; fruit two-celled; seeds whitish. **R. complanatus.**

Stems cylindrical **1915**

1915. Stems producing repeatedly divided branchlets.

Often tall and robust; sterile branches bearing numerous minute leaves, mostly fascicular-crowded; spikelets very numerous in a generally elongated panicle, from ellipsoid-ovate to globular, of both kinds uniform; bracts shining-brown, fine-pointed; sepals and petals of the staminate flowers three, of the pistillate flowers two; stigmas two; fruit very small, often only tardily opening; seeds turgidly ovate, colorless. **R. tetraphyllus.**

Stems branchless **1916**

1916. Leaf-stalks closely clasping.

Rather tall, slender; stem-leaves seldom developed and then extremely small, setular, appressed; leaf-stalks rather short; spikelets usually numerous, from ellipsoid-ovate to globular, the staminate smaller; floral bracts brown, transparent, often finely pointed; sepals and petals of the staminate flowers three, of the pistillate flowers two; stigmas two; staminodia absent; fruit minute, roundish, slightly pointed. **R. gracilis.**

Leaf-stalks laxly clasping.

Alpine, somewhat tall; leaf-stalks without even rudimentary leaves; spikelets several or few, seldom two or solitary, racemous or spicate; bracts deep-brown, pointed; sepals and petals of the staminate flowers three, of the pistillate flowers two; staminodia present; style obliterated; fruit two-celled. **R. australis.**

LEPTOCARPUS.

1917. Staminate spikelets many, comparatively small.

Often tall; stems almost greyish, seldom divided; leaf-stalks closely clasping, terminating in a deciduous tender membrane; leaves quite rudimentary or absent; staminate spikelets amply paniculate; stamens very short; pistillate

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spikelets in a quite contracted panicle or spike almost obverse-conical; their bracts rigid, the upper spreading; their sepals keeled, about as long as the petals and somewhat pink; stigmas red, hardly longer than the style; fruit trigonous-ellipsoid. **L. tenax.**

Staminate spikelets few, comparatively large.

Rather tall; stems undivided, pale-green, very slender, somewhat shining; leaf-stalks very closely clasping, terminated by a soon seceding tender membrane; leaves quite rudimentary; staminate spikelets almost ellipsoid, generally bent downward, their stalks grey or whitish from a very short vestiture; pistillate spikelets almost spicate; floral bracts dark-brown, of either kinds of spikelets glabrous; sepals and petals minute; stamens very short; stigmas hardly longer than the style; fruit minute.

L. Brownii.

CALOSTROPHUS.

1918. **Spikelets axillary.**

Seldom tall; branches thin; leaves minute, setular, very spreading; leaf-stalks laxly clasping, at the margin densely beset with hairlets; spikelets all solitary and sessile, the staminate two- to four-flowered; sepals and petals tender-membranous, of about equal length; styles disconnected; fruit minute, about as long as the persistent sepals and petals, brownish, without any stalklet. Figure 124.

C. lateriflorus.

Spikelets terminal.

Never tall; branches thin, from an extremely short vestiture grey; leaf-stalks closely clasping; leaves quite rudimentary; staminate spikelets quite small, laxly paniculated, bearing several flowers; sepals and petals three each, of about equal length; anthers on a very short filament, erect; pistillate spikelets comparatively large, solitary or occasionally two to four together; bracts brown, shining, hardly pointed; style undivided; stigmas three; fruit very small, hard, longer than the sepals and petals, provided with a short thick stalklet, pale, angular around the middle. **C. fastigiatus.**

LEPIDOBOLUS.

1919. **Floral bracts hardly fringed, quite pointless or only minutely pointed.**

Never tall; stems either straight or somewhat flexuous; spikelets capitular, comparatively small, occasionally two; sepals ciliolated; petals three; anthers emerging; style very thin; fruit very small. **L. drapetocoleus.**

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ACALYCEAE HYPOGYNAE.

CYPERACEAE.

CHORIZANDRA.

1920. Stems slender, with indistinct transverse partitions.

Developed leaves stem-like; leaf-stalks slit; base of the floral leaf slightly dilated; involucral bracts dark-colored; the two outer floral bracts keeled, all ciliolated; the innermost narrow; stamens often about twelve; anthers red; stigmas two; fruit obovate-ellipsoid, towards its base conical, streaked. **C. enodis.**

Stems robust, with distinct transverse partitions.

Developed leaves stem-like; leaf-stalks broad, pale and shining inside, soon slit to the base; headlets usually depressed; base of the floral leaf broadly dilated; involucral bracts dark-colored; floral bracts all nearly elliptical or somewhat spatular; stamens often about twelve; stigmas two or three; fruit blackish, suddenly pointed, longitudinally and transversely streaked.
C. cymbaria.

OREOBOLUS.

1921. Leaves exactly distichous.

Leaves short, closely set, almost straight, often rather pale, their stalks much broader and open; spikelets very small, solitary, axillary, on short and compressed stalks; sepals and petals minute, rigid, persistent; style with its stigmas deciduous; fruit obovate-ellipsoid, very blunt, somewhat trigonous. **O. Pumilio.**

CYATHOCHAETE.

1922. Spikelets comparatively short, few or several to each principal floral leaf.

Rather or quite tall; leaves long, some on the stems, channelled, very much narrowed upwards; panicle elongated, slender-branched, hardly spreading; spikelets narrow; floral bracts brown, setular-pointed; rudimentary sepals and petals ciliolated towards the base; stamens and style partly exserted; stigmas two; fruit slender.
C. diandra.

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CAUSTIS.

1923. Spikelets unisexual.

Rather tall; flowering branches slender, hardly or only moderately curved; spikelets rather large; stamens generally four; fruit turgidly ovate, the persistent portion of the style shorter. **C. rostiacea.**

Spikelets bisexual 1924

1924. Flowering branches much curved.

Somewhat or quite tall; branches usually fascicular, very thin; stem-leaves about as long as their stalk or shorter; spikelets slender, glabrous; bracts pointed; stamens generally three; fruit ovate-globular or ellipsoid, the persistent portion of the style about as long. **C. flexuosa.**

Flowering branches hardly curved.

Finally tall; branches robust, unilaterally flattened or somewhat channelled; spikelets rather large; bracts externally beset with a subtle vestiture; stamens generally five in the pistillate flower, less in the other; anthers brown, pointed; stigmas occasionally four; fruit ellipsoid, the thick persistent portion of the style shorter. **C. pentandra.**

GAHNIA.

1925. Leaves undeveloped.

Rather dwarf and even occasionally minute; stems slender, quite straight, cylindrical; leaf-stalks close, bearing merely a rudimentary leaf, none or only one towards the middle of the stem; panicle very short, spikelike-contracted or quite spicate; floral bracts brownish; stamens three; fruit turgidly ovate, somewhat black.
(Cladium junceum.) **G. juncea.**

Leaves developed 1926

1926. Stems and leaves hollow, with distinct transverse partitions.

Very tall; leaves stem-like, robust, cylindrical, the principal floral leaf continuing the stem; panicle long, repeatedly compound, spikelets scattered; floral bracts brownish; stamens and stigmas three; fruit trigonous-ovate.
(Cladium articulatum.) **G. articulata.**

Stems and leaves solid, with faint or without any transverse partitions 1927

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1927. Leaves prominent- or compressed-quadrangular.

Rather tall; stems somewhat quadrangular; leaves rather long; panicle moderately or hardly spreading; spikelets crowded; floral bracts brownish, pointed, somewhat fringed; stamens and stigmas three; fruit turgidly obovate. (Cladium tetraquetrum). **G. tetraquetra.**

Leaves flat or channelled or cylindrical 1928

1928. Leaves flat.

Rather dwarf; stems much compressed; leaves placed vertically, moderately long, all basal, flat, hardly raised along the median line; panicle contracted; spikelets somewhat clustered; floral bracts brownish, pointed; stamens and stigmas three; fruit turgidly ovate, not rarely retained by the elongated stamens. (Cladium schoenoides.) **G. schoenoides.**

Leaves channelled or cylindrical 1929

1929. Floral bracts blackish 1930

Floral bracts brownish 1934

1930. Panicle much contracted 1931

Panicle amply spreading 1932

1931. Spikelets minute, their fruit narrow-ellipsoid.

Rather tall; stems slender, leafy; leaves long, channelled, much narrowed upwards, rough, straight-pointed; panicle long; spikelets scattered; bracts much pointed; stamens mostly four; stigmas three; fruit somewhat trigonous. (Cladium microstachyum.) **G. microstachya.**

Spikelets of considerable size, their fruit trigonous-ovate.

Rather tall; stems leafy; leaves long, channelled or along the margin involute, rough, straight-pointed; spikelets scattered, narrow; lower bracts much pointed; stamens three; anthers very narrow; stigmas three; fruit rather prominently triangular. (Cladium Radula.) **G. Radula.**

1932. Well-matured fruit bright-red.

Very tall, densely tufted; stems leafy, many; leaves very long, channelled, rough, much narrowed and recurved at the upper end; panicle ample and much elongated, partly

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drooping; spikelets almost scattered, turgid; lower floral bracts usually pointed; stamens three or more; fruit turgidly ovate, shining, long retained by the elongated stamens.

(Cladium erythrocarpum.) **G. erythrocarpa.**

Well-matured fruit brownish or black 1933

1933. Fruit brownish.

Very tall, densely tufted; stems leafy, many; leaves very long, channelled, rough, much narrowed and recurved at the upper end; panicle ample and much elongated, partly drooping; spikelets almost scattered, turgid; lower floral bracts usually blunt; stamens from four to six; stigmas three, generally bifid; fruit turgidly ovate, long retained by the elongated stamens.

(Cladium psittacorum.) **G. psittacorum.**

Fruit shining-black.

Tall, tufted; stems leafy, cylindrical; leaves very long, channelled, much narrowed upwards, rough; panicle long; spikelets rather small, the ultimate somewhat clustered; stamens usually three; stigmas three, undivided; fruit very small, turgidly ovate, long retained by the elongated stamens.

(Cladium melanocarpum.) **G. melanocarpa.**

1934 Leaves filiform or compressed-cylindrical 1935

Leaves quite flat or along the margin incurved ... 1936

1935. Stems and leaves filiform, somewhat hard.

Rather tall; stems slender, cylindrical, as well as the scanty leaves grooved on one side; panicle rather contracted, distantly branched; spikelets scattered; bracts pointed; stamens and stigmas three; fruit turgidly ovate, often shining-whitish and long retained by the elongated stamens. (Cladium Gunnii) **G. Gunnii.**

Stems and leaves compressed-cylindrical, somewhat soft.

Rather tall; stems cylindrical, hardly firm; leaves mostly basal and elongated, occasionally across-partitioned, sometimes hardly compressed; floral leaves abbreviated; panicle moderately spreading or contracted, the spikelets much clustered; floral bracts fringed; stamens and stigmas three; fruit ovate-ellipsoid.

(Cladium glomeratum.) **G. glomerata.**

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1936. Clusters of spikelets scattered in the panicle, their bracts blunt.

Very tall; leaves very long, channelled, rather broadish-linear, but at the upper end much narrowed, greyish-green, rough; panicle leafy, widely spreading, often somewhat corymbous, partly recurved; spikelets quite small, in ultimate capitular clusters; stamens mostly two, occasionally three; stigmas three or sometimes two or four; fruit hard, turgidly ovate, slightly trigonous; seed black outside.

(Cladium Mariscus.) **G. Mariscus.**

Clusters of spikelets crowded in the panicle, their bracts pointed 1937

1937. Fruit narrow-ellipsoid, pale-colored.

Very tall, large-tufted; stems leafy, rigid; leaves very long, channelled, much narrowed and recurved at the upper end, rough; panicle leafy, very elongated; spikelets often irregularly crowded; floral bracts pointed; stamens three; fruit elongated, slightly trigonous.

(Cladium Filum.) **G. Filum.**

Fruit turgidly ovate, dark-colored.

Very tall, large-tufted; stems leafy, rigid; leaves very long, channelled, much narrowed and recurved at the upper end, rough; panicle leafy, very elongated; spikelets often interruptedly crowded into clusters; floral bracts much pointed; stamens four to six; stigmas three, one occasionally subdivided; fruit short.

(Cladium trifidum.) **G. trifida.**

LEPIDOSPERMA.

1938. Quite or rather tall 1939

Rather dwarf 1946

1939. Stems hollow 1940

Stems solid 1941

1940. Leaves rather blunt-edged.

Stems hardly broad, compressed, leafless, blunt-edged, as well as the leaves of comparatively soft texture; leaves very long, broadly linear, somewhat turgid, smooth, the lowest floral leaf already quite short; spikelets in an elongated rather contracted panicle, slightly pointed; rudimentary sepals and petals of only about one-third the length of the fruit. **L. longitudinale.**

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Leaves rather sharp-edged.

Stems broad, compressed, leafless, as well as the leaves of comparatively soft texture; leaves extremely long, very broadly linear, somewhat turgid, hardly rigid, smooth; the lowest floral leaf already short; spikelets in a very elongated somewhat spreading panicle, slightly pointed; floral bracts of this and other species occasionally almost distichous; rudimentary sepals and petals of about one-third the length of the fruit. (Possibly a variety of the preceding.) **L. exaltatum.**

1941. **Stems and leaves quite broad** 1942

Stems and leaves rather narrow 1943

1942. **Spikelets in a comparatively short and rather contracted panicle.**

Maritime; stems leafless, sharp-edged, much compressed; leaves hard, almost ensate, the floral leaf already quite short; panicle dense; spikelets mostly ellipsoid, pointed; fruit turgidly ovate. "Sword-Rush." **L. gladiatum.**

Spikelets in a much elongated and rather spreading panicle.

Sylvan, very tall; stems leafless, much compressed, sharp-edged; leaves very long, ensate-linear; floral leaves much abbreviated, passing gradually into bracts; branches of the panicle often turned to one side and somewhat bent downward; spikelets mostly ellipsoid, pointed; fruit globular-ovate. **L. elatius.**

1943. **Stems almost blunt-edged.**

Stems leafless, flat; leaves elongated-linear; spikelets never very numerous, clustered in a contracted panicle, very short, globular-ovate; rudimentary sepals and petals shorter than the fruit. **L. globosum.**

Stems rough- or sharp-edged 1944

1944. **Rudimentary sepals simply pointed.**

Stems leafless, flat or slightly convex on one side, rough-edged; leaves rather long, broad-linear, the lowest floral leaf occasionally elongated; spikelets in a contracted rather short panicle; rudimentary sepals and petals always shorter than the fruit. **L. viscidum.**

Rudimentary sepals extending into a capillary bristlet 1945

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1945. Spikelets in an elongated much contracted panicle.

Stems leafless, quite flat or slightly convex on one side, sharp-edged; leaves rather long, broad-linear; panicle much exceeding the lowest floral leaf; spikelets closely approximated but hardly clustered, narrow-ellipsoid, somewhat pointed; rudimentary sepals and petals often longer than the fruit. **L. laterale.**

Spikelets in a short somewhat spreading panicle.

Stems leafless, almost flat or slightly convex on one side, sharp-edged; leaves rather long, broad-linear; panicle rather dense, often only slightly exceeding the last floral leaf or even shorter; spikelets narrow-ellipsoid, somewhat pointed; rudimentary sepals and petals often longer than the fruit. **L. concavum.**

1946. Leaves almost flat.

Stems leafless, very narrow, considerably compressed, dwarfed in the alps; leaves broad-linear; panicle quite short, often exceeded by the lowest floral leaf; spikelets small, narrow-ellipsoid, pointed, exceptionally reduced to two. **L. lineare.**

Leaves nearly filiform-cylindrical or almost undeveloped 1947

1947. Spikelets large, crowded into a single fascicular cluster.

Stems leafless, filiform-cylindrical, usually grooved on one side; leaves similar to the stems but shorter; floral leaves bract-like, hardly surpassing the spikelets, dark-colored; fruit globular-ovate, longer than the rudimentary sepals and petals. Figure 125. **L. carphoides.**

Spikelets small, arranged in a panicle 1948

1948. Panicle **much twisted, spike-like.**

Alpine; stems leafless, very thin, compressed-cylindrical, furrowed; leaves somewhat angular and compressed, slightly rough; panicle very short, often reduced to three or two or even one spikelet and somewhat bent downward; rudimentary sepals and petals about half as long as the fruit. **L. tortuosum.**

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Panicle without much curvature, often only scantily branched 1949

1949. **Panicle somewhat spreading** 1950

Panicle almost spike-like 1951

1950. **Stems somewhat compressed.**

Stems leafless, very narrow, almost semicylindrical; leaves very narrow, rather flat; spikelets narrow and pointed; rudimentary sepals and petals shorter than the fruit. **L. semiteres.**

Stems quite filiform.

Stems leafless, thin, without any groove; leaves rather elongated, rigid, somewhat compressed and channelled; panicle contracted; spikelets pointed; style twice as long as the stigmas. **L. canescens.**

1951. **Spikelets scattered in the spike.**

Stems leafless, thinly filiform-cylindrical; leaves much reduced or almost undeveloped; spikes quite short, few or two or often one only, the rhachis flexuous or nearly straight; spikelets slender, occasionally reduced to three or even two or one; fruit ellipsoid, much surpassing the rudimentary sepals and petals. **L. filiforme.**

Spikelets clustered in the spike.

Stems leafless, thin, nearly cylindrical, grooved on one side; leaves shorter, somewhat channelled, some slightly compressed; spikelets slender; rudimentary sepals and petals much shorter than the fruit. **L. Neesii.**

LEPIDOSPORA.

1952. **Spikelet erect, unsupported by any floral leaf.**

From dwarf to rather tall; stems leafless, very slender; leaves basal, very narrow and channelled or obliterated; spikelet broadish, considerably compressed, much narrowed upwards; floral bracts few, dark-brown or almost black; rudimentary sepals and petals shorter than the fruit, from lanceolar to ovate; stigmas red; fruit very small, globular-ovate, slightly trigonous, brown outside. **L. tenuissima.**

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CARPHA.

1953. Spikelets almost corymbously arranged.

General appearance rather grass-like, from dwarf to rather tall; leaves quite narrow, shorter than the stem, all basal except two floral leaves, nearly flat or somewhat channelled, blunt; floral bracts few, pale-brown, somewhat pellucid; rudimentary sepals and petals persistent, devoid of plume-like ciliolation at the upper end; persistent portion of the style comparatively long and rigid; fruit trigonous-ellipsoid. **C. alpina.**

KYLLINGIA.

1954. Spikelets capitular-crowded, a second flower of each staminate only.

Never tall; leaves similar to those of grasses, shorter than the stems; floral leaves generally three, unequally abbreviated; spikelets very small; the two larger bracts unequal, venular-streaked, the carinular venule hardly prominent; fruit nearly as long as the bract, turgidly ovate, pale outside. **K. intermedia.**

CYPERUS.

1955. Annual 1956

Perennial 1957

1956. Spikelets numerous, crowded into a solitary cluster.

Dwarf; leaves very narrow; conspicuous floral leaves usually three or two; spikelets minute, flat; floral bracts pointed, pale-greenish; stamen often one only; stigmas usually two; fruit ovate, compressed particularly at the inner side. **C. pygmaeus.**

Spikelets three or two or one only.

Often very dwarf; leaves linear-filiform; the longer floral leaf erect, a shorter besides; spikelets flat; floral bracts blunt, rather pale; stamens one or two; stigmas three; fruit trigonous-ellipsoid. **C. tenellus.**

1957. Fruit biangular 1958

Fruit triangular 1960

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1958. Floral bracts blunt, laterally very dark.

From quite dwarf to somewhat tall; stems trigonous, very weak; leaves comparatively short; spikelets flat, forming one to five mostly or partly sessile fascicles, seldom reduced to two or one; floral bracts towards the carinular venule greenish- or yellowish-brown; stamens two; anthers very short; stigmas two; fruit roundish-obovate, compressed. **C. Eragrostis.**

Floral bracts somewhat pointed, laterally brownish or yellowish 1959

1959. Spikelets comparatively narrow.

Often rather dwarf; leaves very narrow; conspicuous floral leaves two or three, of unequal length; fascicles of spikelets crowded into a solitary or two or few clusters, partly umbellate, stalked; spikelets flat; floral bracts pale- or dark-brown, quite narrow; stamens two; fruit compressed, roundish-obovate, short in proportion to its floral bract. **C. globosus.**

Spikelets comparatively broad.

Often rather tall; leaves flat; conspicuous floral leaves one or two; fascicles of spikelets partly umbellate or somewhat spicately or capitularly arranged; spikelets flat; floral bracts pale-yellowish- or greenish-brown, hardly pointed, shining; stamens often three; stigmas two; fruit much compressed, from ovate to rhomboid-orbicular, short in proportion to its floral bract, greyish outside. **C. unioloides.**

1960. Comparatively dwarf 1961

Comparatively tall 1965

1961. Floral bracts pointed 1962

Floral bracts blunt 1963

1962. Fascicles of spikelets singly terminal.

Rather or quite dwarf; stems very thin; leaves very narrow; conspicuous floral leaves one to three; spikelets flat, quite small, one to three or few, seldom numerous; floral bracts greenish, lined with prominent venules; stamens three; stigmas three; fruit trigonous, broadish upwards. **C. gracilis.**

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Fascicles of spikelets umbellate.

Stems weak, very thin; basal leaves flat, few or occasionally undeveloped; conspicuous floral leaves lax, four or fewer; spikelets few in each fascicle, flat; floral bracts slightly distant, acute, pale, with three venules; stigmas three; fruit sharply triangular, smooth. **C. trinervis.**

1963. **Floral bracts about as long as broad, minute.**

Stems slender; leaves mostly rather short, occasionally undeveloped; floral leaves one to three; spikelets very short and narrow, densely crowded into several partly umbellate fascicles; floral bracts numerous, dark-brown, nearly orbicular; stamens one or two; stigmas three; fruit sharply triangular. **C. difformis.**

Floral bracts longer than broad, small 1964

1964. **Root without any tubers.**

Stems slender, sometimes rather dwarf, always lax; leaves narrow; conspicuous floral leaves three or four; fascicles of spikelets in a compound umbel; spikelets much compressed, few in each fascicle; floral bracts laterally dark-brown; anthers very narrow; stigmas three; fruit broadish, much shorter than its bract, pale, prominently triangular. **C. concinnus.**

Root producing tubers.

Seldom tall; leaves rather short; conspicuous floral leaves usually one or two; fascicles of spikelets somewhat spicate, forming a simple umbel or a solitary cluster; spikelets much compressed; floral bracts brown, venular-streaked; stigmas three; fruit considerably shorter than its bract, pointed, prominently triangular. **C. rotundus.**

...

1965. **Stems quite cylindrical.**

Seldom dwarf; stems generally numerous, tough; basal leaves almost undeveloped; floral leaves rigid, often several, rarely much elongated; spikelets crowded into a solitary cluster or arranged into few or several umbellate fascicles; floral bracts laterally dark-brown, somewhat pointed; stigmas three; fruit broadish, prominently triangular. (C. textilis.) **C. vaginatus.**

Stems conspicuously triangular 1966

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1966. Floral bracts moderately approximated, of conspicuous size.

Stems robust, often very tall, rough at the edges; leaves much elongated, comparatively broad; floral leaves three or often more, also very long and broadish; spikelets narrow, rather long, very spreading, pointed, in rather long often compound-umbellate spikes, or sometimes almost in fascicles; floral bracts blunt, deep-brown, few or several, seldom numerous; stigmas three; fruit narrowly trigonous-ellipsoid, pointed. **C. lucidus.**

Floral bracts closely approximated, very small.

Stems often very tall, smooth at the edges; leaves much elongated, comparatively broad; one or two of the floral leaves particularly long; spikelets rather short though usually with many flowers, gathered into compound-umbellate quite elongated spikes; floral bracts laterally brownish, somewhat pointed, shining; anthers pointless; stigmas three; fruit very small, rather narrow, trigonous. **C. exaltatus.**

SCHOENUS.

1967. Leaves conspicuously developed 1968

Leaves almost undeveloped 1972

1968. Stem-leaves usually present 1969

Stem-leaves usually absent 1970

1969. Spikelets minute, only two or three together.

Quite dwarf, often pale-green; stems very thin; leaves setular- or filiform-linear; spikelets mostly axillary, each producing only one fruit; sepals and petals reduced to bristlets; fruit pale outside. **S. axillaris.**

Spikelets rather small, few or several together.

Stems rather thin and dwarf; leaves narrow-linear, most of the floral leaves much abbreviated; fascicles of spikelets sessile or stalked, often axillary and clustered; floral bracts comparatively narrow, dark- or black-brown; flowers usually two; sepals and petals reduced to bristlets; anthers very short; fruit pale outside. **S. apogon.**

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1970. Very robust.

Very tall; amply and densely tufted, finally forming quite big and very ponderous trunks above ground; stems compressed, very long, many from each trunk; leaves also of great length, broad-linear, very rigid, slightly channelled, the floral leaves quite rudimentary; leaf-stalks open, somewhat fringed; spikelets numerous, in a large terminal capitular cluster; flowers two, but only one fruit-bearing; rudimentary sepals setular; rudimentary petals absent; fruit compressed or trigonous, cuneate-obovate, pointed. "Trunk-Rush." **S. sphaerocephalus.**

Very slender 1971

1971. Floral bracts light-brown, without any lustre.

Rather dwarf; stems very thin; leaves few, short, thinly filiform, sometimes channelled, occasionally obliterated, the lowest floral leaf generally somewhat distant, one rudimentary leaf occasionally near the middle of the stem; spikelets one to four, almost terminal, quite small, soon somewhat turgid; floral bracts pointed; flowers two but only one fruit-bearing; sepals and petals reduced to minute bristlets; fruit turgid, blunt, from prominent streaks somewhat angular. **S. pauciflorus.**

Floral bracts black-brown, shining.

Chiefly maritime, dwarf, producing offshoots from the root; stems very thin; leaves few, filiform, short, slightly channelled; the lowest floral leaf often well developed and erect; spikelets one to seven, very small, almost lateral; floral bracts blunt; flowers two; sepals and petals reduced to bristlets, conspicuously ciliolated towards the base; fruit shining. **S. nitens.**

1972. Inflorescence abbreviated 1973

Inflorescence elongated 1976

1973. Base of the style finally much enlarged.

Never tall; stem threadlike-thin, very weak; tubular leaf-stalks as well as the floral bracts quite glabrous, the latter dark- or black-brown; spikelets from one to eleven, quite short and narrow, sessile or when more than few together somewhat paniculated; sepals and petals absent; fruit ovate, terminated by the large turgid base of the style, only one developed. **S. capillaris.**

Base of the style remaining unenlarged 1974

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1974. Floral bracts at their margin densely beset with hairlets.

Seldom tall; stems thin, furrowed; clusters of spikelets two or few, partly stalked; spikelets small, curved and pointed; flowers two; floral bracts nearly black; rudimentary sepals and petals absent; fruit blunt, rugulous.
S. ericetorum.

Floral bracts nearly or quite glabrous 1975

1975. Stamens usually three.

Seldom tall; stems slender, slightly furrowed; spikelets small, crowded into a solitary cluster; flowers two; rudimentary sepals and petals absent; fruit blunt, rugulous.
S. imberbis.

Stamens usually four to seven.

Never tall; stems undivided, subtile-streaked; leaves quite rudimentary, basal and floral only; spikelets many, crowded into a solitary almost terminal cluster; floral bracts brown; flowers two; rudimentary sepals and petals absent; fruit smooth, blunt, slightly angular.
S. aphyllus.

1976. Leaf-stalks quite glabrous.

Rather tall; stems rigid; the lowest of the rudimentary floral leaves occasionally distant; spikelets rather long, somewhat clustered in a narrow panicle; floral bracts brown; flowers three to five; rudimentary sepals and petals absent; stamens three; fruit pale-brownish outside.
S. brevifolius.

Leaf-stalks at the summit beset with hairlets.

Tall; stems straight, rigid, undivided; tubular leaf-stalks basal and floral only; leaves rudimentary or obliterated; spikelets mostly stalked, much compressed, clustered in a somewhat unilateral panicle; floral bracts blunt, nearly black; flowers one to three; rudimentary sepals and petals almost or quite absent; fruit pale outside, rugular-rough.
S. melanostachys.

SCIRPUS.

1977. Tall 1978

Dwarf 1982

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1978. Stems triangular **1979**

Stems cylindrical or somewhat compressed **1981**

1979. Leaves nearly trigonous.

Shoots creeping; stem firm; leaves two or few, elongated, rigid, channelled and keeled-angular; spikelets few or several in a lateral cluster, all sessile; floral bracts usually dark-brown, pointed from below the bilobed summit; rudimentary sepals and petals reduced to bristlets or partly absent; apex of the anthers pointed, rough; stigmas two or three; fruit bi- or tri-angular, broadest upwards. **S. pungens.**

Leaves nearly flat **1980**

1980. Spikelets quite large, but hardly numerous, yellowish- or dark-brown.

Stems leafy, often partly submerged; leaves very long, broad-linear, keeled, but otherwise flat; spikelets generally in a leafy somewhat compound terminal cyme; summit of the floral bracts receding from the terminal point; rudimentary sepals and petals reduced to bristlets or partly absent; fruit bi- or tri-angular, almost truncate but pointed, shining. **S. maritimus.**

Spikelets very numerous, but hardly large, blackish-green.

Stems leafy, very tall; leaves broad-linear, at the margin and keel rough, the floral leaves also much elongated; spikelets large, dispersed or oftener clustered in a compound leafy cyme; rudimentary sepals and petals changed into much elongated capillary bristlets, variously curved and towards the upper end densely ciliolated; fruit pale; plan-convex, on the outer side bluntly angular, slightly pointed. **S. polystachyus.**

1981. Stems robust, bearing a cyme of large spikelets.

Often very tall and partly submerged; stems of soft texture, cylindrical or very slightly compressed; basal leaves often undeveloped, occasionally flattened, one conspicuous almost cylindric and pointed floral leaf continuing the stem; spikelets large, many-flowered, in an almost terminal generally compound cyme, either dispersed or clustered; floral bracts brown, broad, blunt or infra-terminally pointed; rudimentary sepals and petals reduced to reversedly rough bristlets or partly absent; stigmas two or three; fruit bi- or tri-angular. ... **S. lacustris.**

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Stems slender, bearing a cluster of small spikelets.

Never very tall; shoots creeping; stems rather rigid, generally somewhat compressed; leaves almost undeveloped, but the floral one terminating the stem; spikelets many, in an infra-terminal cluster; floral bracts dark-brown; rudimentary sepals and petals absent; stigmas three; fruit on an elevated base, inequally triangular, shining.

S. nodosus.

1982. **Stems somewhat robust.**

Tufted; stems cylindric, lax, of soft texture, streaked, partly somewhat prostrate; basal leaves undeveloped, generally a mere leaf-stalk developed also towards the middle of the stem; floral leaf much elongated, comparatively thick, continuing the stem often very much beyond the inflorescence; spikelets two to six together, sessile, rather long, narrow- or cylindric-ellipsoid; seldom a solitary flower developed also from the inner base of the stalk of a radical leaf; floral bracts pointed, often pale, rather fugacious; rudimentary sepals and petals often absent; stamens three or occasionally two; stigmas three or two; fruit tri- or bi-angular, blackish, transversely rugular-striate.

S. supinus.

Stems quite thin 1983

1983. **Often creeping and floating** 1984

Often simply tufted 1985

1984. **Spikelet usually very small, few-flowered.**

Shoots often elongated, very thin; stems solitary, short and quite thin; leaves short, thinly linear-filiform, often only one or two or three at each node; floral leaf generally undeveloped; spikelet terminal, solitary; floral bracts faintly streaked, blunt, usually pale; rudimentary sepals and petals absent; stamens three; stigmas two; fruit flat, pale, orbicular-obovate, thin-edged, slightly pointed.

S. fluitans.

Spikelet usually conspicuous, many-flowered.

Alpine; seldom floating, but emitting elongated shoots; stems very short, thin, solitary; leaves thinly linear, never numerous from any of the nodes or for any of the stems; floral leaf undeveloped; spikelet terminal, solitary; floral bracts blunt, rather strongly streaked, greenish with a brown tinge; rudimentary sepals and petals absent; stamens three; stigmas two; fruit almost orbicular, flat, rather thick-edged, pale. (Perhaps a variety of the preceding.)

S. crassiusculus.

1985. Floral leaf undeveloped.

Often very dwarf; stems quite thin; leaves all undeveloped; spikelet minute, solitary, terminal, rather many-flowered; floral bracts blunt, without any prominent streaks; rudimentary sepals and petals absent; stigmas two; fruit pale, almost orbicular. **S. arenarius.**

Floral leaf developed 1986

1986. Normally one stamen only.

Seldom floating, but often emitting elongated shoots; stems thin; leaves short, very narrow, usually only one well developed for each stem, but several or few at each node; the floral leaf erect, much abbreviated, yet extending beyond the inflorescence; spikelets quite small, several or few in a simple or prolifically double or triple cluster, or reduced occasionally to two or one; floral bracts blunt, somewhat streaked, greenish with partly brown coloration; rudimentary sepals and petals absent; stigmas much oftener three than two; fruit smooth, mostly triangular, hardly longer than broad. **S. inundatus.**

Normally three stamens 1987

1987. Sides of the fruit longitudinally well-streaked.

Often very dwarf; stems almost setular-thin; leaves ... capillary-narrow; floral leaf erect, extended beyond the inflorescence; spikelets one to three, minute, few-flowered; ... rudimentary sepals and petals absent; stigmas three; fruit very minute, roundish-turgid, slightly triangular. **S. setaceus.**

Sides of the fruit with hardly any streaks.

1988. Floral bracts almost streakless.

Stems very thin; basal leaves often undeveloped; floral leaf usually much extended beyond the inflorescence; spikelets one to three, very small, few-flowered; floral bracts blunt; rudimentary sepals and petals absent; stigmas three; fruit bluntly triangular, smooth or slightly granular-rough. **S. riparius.**

Floral bract prominently streaked.

Often very dwarf; stems quite thin; leaves very narrow; the floral leaf somewhat or much extending beyond the inflorescence; spikelets quite small, few in a solitary cluster, or reduced occasionally to two or one, few-flowered; floral bracts rather firm; rudimentary sepals and petals absent; anthers from linear to ellipsoid; stigmas three; fruit prominently triangular, slightly longer than broad. **S. cartilagineus.**

HELEOCHARIS.

1989. Stems hollow, the cavity intercepted by transverse partitions.

Tall, somewhat submerged; root tuber-bearing; stems tall, comparatively thick; spikelet long, cylindrical; floral bracts numerous, blunt, often intra-marginally dark-colored, without any prominent keel; anthers very narrow; stigmas two or three; fruit somewhat compressed, subtile-dotted, greyish-brown, shining.

H. sphacelata.

Stems solid 1990

1990. Stems almost capillary.

Quite dwarf, often producing offshoots; stems quite short, somewhat angular; spikelet minute; floral bracts few, dark-brown, blunt; rudimentary sepals and petals only partially present; stigmas three; fruit extremely small, trigonous, pale. **H. acicularis.**

Stems thickly filiform 1991

1991. Fruit triangular.

Producing radical offshoots; stems rather dwarf; spikelet short, ovate-ellipsoid; floral bracts mostly blunt, distinctly keeled, laterally brown; stigmas three.

H. multicaulis.

Fruit biangular.

Producing offshoots; stems without any angular lines; spikelet ellipsoid-cylindrical, somewhat pointed; floral bracts dark- or black-brown, distinctly keeled; stigmas two; fruit convex on both sides. **H. acuta.**

FIMBRISTYLIS.

1992. Perennial 1993

Annual 1994

1993. Fruit longitudinally and transversely streaked.

Rather tall and firm; stems somewhat angular or compressed; leaves few, quite narrow; spikelets in a generally compound cymous umbel, ovate-ellipsoid; floral bracts brown; stamens two or one; style flattened, ciliolated; stigmas two; fruit biconvex, whitish.

F. communis.

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Fruit almost smooth.

Rather tall and firm; stems somewhat angular; basal leaves few, quite short; one or two of the floral leaves sometimes rather elongated; spikelets in a simple or somewhat compound cymous umbel, ovate-ellipsoid, exceptionally reduced to two or one; stamens three; floral bracts brown; style ciliolated; stigmas two; fruit biconvex.
F. ferruginea.

1994. Style fringed-ciliolate.

Rather dwarf and lax; stems thinly filiform; basal leaves many, short, very narrow, mostly beset with minute hairlets; floral leaves several; spikelets in a compound cymous umbel, ovate-ellipsoid; floral bracts light-brown; stamen one only; stigmas two; fruit covered with the reflexed hairlets of the styles. **F. velata.**

Style nearly or quite glabrous.

Rather dwarf and lax; leaves many, short, very narrow, mostly beset with minute hairlets; floral leaves several; spikelets quite small, in a compound cymous umbel, ovate-ellipsoid; floral bracts light-brown; stamens less often two than one; stigmas two; fruit transparent, digonous, smooth. **F. aestivalis.**

LIPOCARPHA.

1995. Annual, dwarf.

Leaves quite short, very narrow; spikelets six or fewer, generally globular; floral bracts numerous, very narrow, usually pale, pointed, soon fugacious; rudimentary sepals two, scale-like, colorless, narrow, connivent, to be regarded rather calycine than bracteal; stigmas two; fruit linear-ellipsoid, compressed. **L. microcephala.**

CAREX.

1996. Stigmas two, fruit-cover and fruit biangular ... 1997

Stigmas three, fruit-cover and fruit triangular ... 2006

1997. Spikelet constantly one only.

Alpine, comparatively dwarf; stems very thin; leaves narrow-linear; floral leaf undeveloped; spikelet from globular to ellipsoid-ovate; staminate flowers few, terminal; pistillate flowers several; floral bracts almost ovate, brown; fruit-cover (perigynium) lanceolar-ovate, short-pointed, greenish but black-brown at the summit; fruit orbicular-ovate, brownish-yellow, shining.
C. cephalotes.

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Spikelets few or several, seldom two, exceptionally one 1998

Spikelets numerous 2004

1998. **Spikelets abbreviated**... 1999

Spikelets elongated 2003

1999. **Floral leaves elongated.**

Comparatively dwarf; leaves linear; spikelets crowded into an irregular spike or into a cluster, small, almost ellipsoid-ovate, with the staminate flowers at the base of each; floral bracts pointed, usually greenish, occasionally brownish, but towards the margin pale; fruit-cover ovate, plan-convex, venular-streaked, ciliolated, much contracted at the summit; fruit much compressed, sessile.

C. inversa.

Floral leaves almost obliterated 2000

2000. **Bracts blunt** 2001

Bracts pointed 2002

2001. **Spikelets globular-ovate.**

Here alpine only; stems often comparatively dwarf; offshoots short; leaves broadish-linear, flaccid; spikelets small, from turgid-ovate to ellipsoid, sessile, either somewhat distant or irregularly crowded into a single spike, with the staminate flowers at the base of each; floral bracts tender, pale, hardly pointed; rhacheole rudimentary, occasionally bract-bearing, often absent; fruit-cover ovate, faintly streaked, plan-convex, short-pointed; fruit flattened.

C. canescens.

Spikelets narrow-ellipsoid.

Alpine, comparatively dwarf; leaves broadish-linear; lowest floral leaf occasionally elongated; spikelets irregularly crowded into a single spike, the staminate flowers particularly developed only at the base of the terminal spikelets; floral bracts nearly black, ovate, blunt; fruit-cover much compressed, ovate, simply acute, pale, glabrous.

C. hypandra.

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2002. Spikelets finally about as long as broad, with upwards much attenuated fruit-covers.

Here alpine only, comparatively dwarf; leaves broadish-linear, the floral leaves undeveloped; spikelets small, always few only, somewhat distant or irregularly crowded into a single spike, with the staminate flowers at the base of each; bracts somewhat pointed, pale-greenish or rather brownish; fruit-covers very spreading, lanceolar-ovate, plan-convex, subtily streaked, the bidenticular apex rough; stigmas two; fruit roundish, compressed. **C. echinata.**

Spikelets finally about doubly as long as broad, with upwards slightly attenuated fruit-covers.

Comparatively dwarf, producing offshoots; leaves broadish-linear, often rather short, the floral leaves seldom well developed; spikelets small, irregularly crowded into a single spike, with the staminate flowers at the summit of each; floral bracts oftener partly greenish than brownish, pointed; fruit-cover much compressed, ovate-lanceolar, hardly pointed, ciliolated; fruit flat. **C. chlorantha.**

2003. Bracts blunt.

Often comparatively tall, producing offshoots; stems acutely and roughly angular; leaves elongated, broadish-linear; lowest floral leaf rather long; spikelets few, distinct, erect, sessile unless the lowest, somewhat cylindrical, the terminal one and occasionally also the second entirely staminate, the others pistillate or only at the upper end staminate; floral bracts almost black, often with a green mid-line; fruit-cover much compressed, nearly ovate, almost or quite blunt, venular-streaked, slightly pointed.

(C. Gaudichaudiana.) **C. caespitosa.**

Bracts much pointed.

Often quite tall; stems acutely and roughly angular; leaves long, broad-linear, conspicuously keeled, lowest floral leaf much elongated; spikelets several, distinct, somewhat bent over, elongate-cylindrical, the upper two to five entirely staminate, the lowest of them occasionally ramified; pistillate spikelets three to five, the lowest of them generally on a long very thin stalk, its lower flowers often remote; floral bracts quite narrow, almost black, pointed; fruit-cover orbicular- or ellipsoid-ovate, brownish or greenish, slightly compressed, suddenly contracted at the summit, faintly venular-streaked; fruit orbicular-ovate, yellowish, smooth, shining. **C. acuta.**

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2004. Stems cylindrical.

Comparatively tall, light- or greyish-green, of rather soft texture; stems smooth, somewhat hollow; leaves linear, almost smooth, channelled-folded; floral leaves undeveloped; spikelets very small, ovate, crowded into a spike-like panicle; floral bracts pointed; fruit-cover plan-convex, ovate-roundish, venular-streaked, suddenly contracted into the short apex, slightly ciliolated.

C. tereticaulis.

Stems triangular 2005

2005. Fruit-cover ciliolar-rough, upwards suddenly contracted.

Often very tall and robust; leaves much elongated, broad-linear; floral leaves never well developed; spikelets very small, mostly ellipsoid-ovate and slightly pointed, crowded into an often very long and contracted panicle, with the staminate flowers at the summit of each; floral bracts often dull-brownish, ovate, slightly pointed; fruit-cover ovate, much compressed, venular-streaked.

C. paniculata.

Fruit-cover glabrous, upwards gradually contracted.

Comparatively tall; leaves very long, broadish-linear, rough at the edges; floral leaves undeveloped; spikelets very small, crowded into a rather long very contracted panicle, with the staminate flowers at the summit of each; floral bracts tender-membranous, quite pale; fruit-cover slender, glabrous, venular-streaked, slightly compressed.

C. declinata.

2006. Spikelet one only.

Alpine, quite dwarf; stems very thin; leaves threadlike-linear; lowest floral leaf short, erect, almost continuing the stem; spikelet minute, with only two or few flowers; floral bracts much pointed; fruit-cover upwards very slender; rhacheole minute, setular; fruit trigonous-ellipsoid, pointed. **C. acicularis.**

Spikelets few or several 2007

2007. Spikelets all sessile, unless the lowest 2008

Spikelets mostly or all conspicuously stalked ... 2012

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2008. Terminal spikelet only staminate towards the base.

Alpine, hardly tall; leaves broadish-linear; edges of the leaf-stalks fibrous-reticularly held together; lowest floral leaf rather conspicuous; spikelets few, distinct but approximated, almost ellipsoid or short-cylindrical, sessile or the lowest slightly stalked, the terminal one broader, with pistillate flowers from below the middle to the summit, the other spikelets entirely pistillate; floral bracts very small, much pointed, dark-brown with green midline; fruit-cover greenish, trigonous-ellipsoid, blunt, venular-streaked; fruit trigonous-obovate, dotted.
C. Buxbaumii.

Terminal spikelet entirely staminate 2009

2009. Contracted apex of the fruit-cover quite short.

Rather tall; stems slender; leaves broadish-linear, the floral leaves elongated; spikelets few, distinct but mostly approximated, rather short, the terminal one entirely staminate, the others pistillate, the lowest often stalked and sometimes distant; floral bracts narrow, finely pointed, to some extent colorless; fruit-cover dark-colored, strongly streaked, ovate-globular, bidenticular-pointed. **C. Brownii.**

Contracted apex of the fruit-cover rather long ... 2010

2010. Fruit-cover of thick texture.

Widely creeping, rather dwarf; stems faintly angular; leaves rather long, broad-linear, much pointed; the floral leaves also elongated; spikelets few or several, distinct, the two or three upper approximated, slender and entirely staminate; the lower spikelets stout, mostly ovate-cylindrical, almost entirely pistillate, somewhat remote; floral bracts dark-colored but pale towards the margin, pointed; fruit-cover comparatively large, ovate-ellipsoid, narrowed into a conspicuously bidenticular apex; fruit dark-brown. **C. pumila.**

Fruit-cover of thin texture 2011

2011. Fruit-cover usually beset with very minute hairlets.

Often dwarf; leaves broadish-linear; principal floral leaves generally elongated; spikelets few or occasionally two, distinct, short-cylindrical, the terminal one more slender and entirely staminate, the others pistillate or staminate at and towards their upper end; floral bracts mostly fine-pointed; fruit-cover trigonous-ovate, attenuated towards the summit, venular-streaked. **C. breviculmis.**

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Fruit-cover always glabrous.

Rather tall; leaves broadish-linear; floral leaves elongated; spikelets few, distant, rather long, nearly cylindrical, the terminal one entirely staminate and sometimes accessorily doubled or tripled, the others pistillate; floral bracts pointed; fruit-cover turgid, attenuated into a rather long apex. **C. Gunniana.**

2012. Spikelets more than one from most of the axils.

Tall; leaves very long, broad-linear; floral leaves also much elongated, their stalks closely cylindrical; spikelets usually many even to the number of twenty, much elongated, slender, the majority long-stalked and thus somewhat pendent, the few upper staminate, the others largely or some completely pistillate and often from two to five together; bracts pale yellowish-brown or to some extent colorless, suddenly pointed; fruit-cover rather long, trigonous-ellipsoid, streaked, much attenuated into the bidenticular summit and also constricted towards the base, rough along the angles. **C. longifolia.**

Spikelets all single, and from distinct axils 2013

2013. Bracts of the pistillate flowers gradually pointed.

Tall; stems robust; leaves long, broad-linear; floral leaves also much elongated; spikelets several, distant, almost erect, rather slender, the lowest often particularly long, one to three of the upper entirely staminate, the others pistillate; fruit-cover comparatively long, greenish, smooth, few-streaked, trigonous-ovate, much attenuated towards the bidenticular summit. **C. alsophila.**

Bracts of the pistillate flowers setular-pointed.

Often very tall; stems robust, rough along the angle; leaves very long, broad-linear; floral leaves also much elongated, all rough at the edges; spikelets few or several, distant, mostly very long, cylindrical, the terminal one staminate, the others pistillate, on long almost capillary stalks and thus bending downward; bracts proportionately small, particularly narrow, long- and rough-pointed; fruit-cover very spreading, greenish, trigonous-ellipsoid, closely streaked, pungently attenuated towards the bifid summit, constricted at the base. **C. Pseudo-Cyperus.**

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UNCINIA.

2014. Slender.

Sylvan, rather dwarf; stems very thin; leaves flaccid, narrow-linear, scattered along the lower portion of the stem; spikelets comparatively short, never turgid, generally unsupported by any conspicuous floral leaf; staminate flowers few, terminal; stamens two only; pistillate flowers several; stigmas three; floral bracts greenish, pointless; utricular cover of rhacheole and fruit greenish, gradually much attenuated upwards; fruit about twice as long as broad. **U. tenella.**

Robust 2015

2015. Leaves usually shorter than the stem.

Alpine; leaves broadish-linear, somewhat rigid, chiefly towards the base of the stem; spikelet rather short, many-flowered, often supported by a conspicuous floral leaf; staminate flowers terminal; floral bracts either greenish or brownish, oval-lanceolar; stamens three; stigmas three; utricular cover of rhacheole and fruit gradually attenuated upwards; fruit fully twice as long as broad. **U. compacta.**

Leaves usually longer than the stem.

Rather tall; leaves broad-linear, somewhat flaccid, chiefly along the lower portion of the stem; spikelet elongated, very slender, generally unsupported by any conspicuous floral leaf; floral bracts greenish, pointless; staminate flowers terminal, few or several; stamens three; pistillate flowers numerous; stigmas three; utricular cover of rhacheole and fruit much attenuated upwards; fruit about three times as long as broad. **U. riparia.**

GRAMINEAE.

(Grasses).

HIEROCHLOA.

2016. Outer bracts about as long as the inner.

Here mostly alpine or subalpine, often tall; leaves broadish, somewhat channelled; membrane inside at the upper end of the leaf-stalk conspicuous; spikelets somewhat crowded in an usually elongated and lax panicle; bracts (glumes) pellucid, the supra-basal two ciliolated and often produced into a short setular elongation (awn); stamens of the pistillate flower only two; anthers bilobed at both ends (like those of most other grasses); styles disunited. **H. redolens.**

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Outer bracts much shorter than the inner.

Somewhat tall; leaves rather narrow, much pointed; spikelets scattered, in a comparatively short panicle; outer bracts often somewhat purplish, all rather firm, constantly awnless, the inner blunt, pale-greenish and more opaque; stamens of the pistillate flowers only two; styles about as long as the stigmas. **H. rariflora.**

EHRHARTA.

2017. Inflorescence paniculate.

Rather tall, long enduring through the season; leaves upwards narrow, gradually pointed, seldom much elongated; panicle quite long, lax; lowest bracts minute, quite rudimentary, the next two large, but narrow and ending in long awns, particularly so the inner, a tuft of hairlets below their base; the fruit-covering bract absent; stamens four; styles very much shorter than the stigmas. Figure 126. **E. stipoides.**

Inflorescence spicate 201

2018. Climbing, very intricately branched.

Often reaching a considerable height and then widely ramified; leaves narrow, rather rigid, never much elongated; spikelets slightly distant in the spike or all quite approximated; bracts blunt, glabrous and awnless, the inner gradually longer except the last; the fruit-covering bract absent; stamens four; styles shorter than the stigmas. **E. juncea.**

Ascending or erect, branchless or scantily branched ... 2019

2019. All bracts blunt.

Partly creeping, often beset with minute hairlets; leaves short, rather rigid, gradually pointed, the upper incurved along the margin; spikelets usually closely together in the spike; fourth and fifth bracts very much longer than the first and second, all these venular-streaked; the fruit-covering bract absent; stamens four; styles shorter than the stigmas. **E. distichophylla.**

Inner bracts pointed.

Partly prostrate, then ascending; leaves rather short, broadish; spikelets slightly distant in the spike; bracts strongly venular-streaked, the two lowest very much shortened; the fruit-covering bract absent; stamens four; styles shorter than the stigmas. **E. acuminata.**

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LEPTURUS.

2020. Spike often curved.

A coast-grass, never tall; stems slender, generally ascending; leaves short, quite narrow, soon incurved along the margin; stalk of the upper leaves turgid; lowest bracts two, pointed, the outer five-streaked. **L. incurvatus.**

Spike often straight.

A coast-grass, usually dwarf and ascending; leaves rather narrow, never long; lowest bract one, pointed, five-streaked. **L. cylindricus.**

PAPPOPHORUM.

2021. Fruit-supporting bracts terminated each by nine very short setular awns.

Seldom tall; leaves moderately long; spike-like panicle short, somewhat cylindrical, from pale-greenish varying to dark-colored; outer bracts longitudinally several- or many-streaked, surrounded and partly invested by soft hairlets; undivided portion of the fruit-supporting bract very short. **P. commune.**

ERIANTHUS.

2022. Spike-like panicles usually two or three, jointly terminal, brownish from dense vestiture.

Desert-grass, often tall; leaves rather narrow, much pointed; panicular or racemous spikes occasionally increased to five or diminished to one; awn quite short. **E. fulvus.**

ANDROPOGON.

2023. Spikes of spikelets terminating the stem 2024

Spikes of spikelets paired in a contracted panicle or most of the spikelets ternately dispersed in an ample panicle 2027

2024. Outer bract always with an impression towards the middle.

Nodes glabrous; leaves narrow, much pointed, the stem-leaves never long; spikes from two to five, without any floral leaves; outer bract elliptical, longitudinally venular-streaked, beset with soft shining hairlets; last inner bract provided with a long twisted awn. **A. pertusus.**

Outer bract usually without any impression ... 2025

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2025. Outer bract beset with long hairlets particularly at the summit.

Leaves narrow, much pointed; nodes bearing a short indument; spikes from two to very numerous, without any floral leaves, the rhachis beset with soft vestiture; outer bract oval; last bract provided with a long twisted brownish shining awn. **A. sericeus.**

Outer bract almost glabrous or only ciliolate ... 2026

2026. Spikes two or three, quite terminal.

Leaves narrow, generally greyish-green; spikes relatively long, without any floral leaves; outer bract elliptical, longitudinally venular-streaked, ciliolate; last bract provided with a conspicuous twisted shining awn.
A. annulatus.

Spikes several or many on a short axis.

Leaves narrow, much pointed, the stem-leaves involute along the margin; spikes rather long, their rhachis beset with soft hairlets, without any floral leaves; outer bract elliptic-lanceolar, almost glabrous, occasionally marked by a foveolar impression about the middle; last bract provided with a twisted shining awn.
A. intermedius.

2027. Spikes of spikelets paired in a contracted panicle .. 2028

Most of the spikelets ternately dispersed in an ample panicle 2029

2028. Spikes much beset with soft white vestiture.

Tall and robust; leaves long, almost flat; spikes clasped by floral leaves, somewhat crowded into a rather narrow panicle, finally bent downwards, their rhachis also densely clothed with soft hairlets; outer bract pointed, glabrous; last bract provided with a short awn or almost awnless.
A. bombycinus.

Spikes glabrous.

Leaves narrow, pointed; spikes in an interrupted and very narrow panicle, clasped by floral leaves, soon spreading or bent downwards, their rhachis also glabrous; outer bract pointed; last bract awnless. **A. refractus.**

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2029. Spikelets quite small.

Leaves narrow, rather flat, gradually pointed; panicle scantily beset with short hairlets, its ultimate branchlets capillary; pistillate spikelets sessile, between two stalked agynous spikelets; outer bract pointed, often of dark-bluish hue; last bract with a short fine awn.
A. montanus.

Spikelets comparatively large 2030

2030. Panicle almost glabrous.

Tall; leaves long, narrow; panicle elongated, its branches much whorled; pistillate spikelets sessile between two stalked agynous spikelets, slender, with a tuft of hairlets at their base; outer bract rigid, rather long, pointed, with a short but very rough ciliolation; last bract provided with a long twisted awn. **A. Gryllus.**

Panicle much beset with hairlets.

Tall; leaves narrow; nodes bearing a dense indument; panicle elongated, its vestiture soft, brownish and shining, its branches much whorled; spikelets somewhat spicately arranged, the pistillate with a tuft of hairlets at their base; outer bract indurating, elongated, soon smooth, often darkened at maturation; last bract provided with a very conspicuous twisted awn. **A. australis.**

ANTHISTIRIA.

2031. Fruit-bearing spikelet largely glabrous outside.

Tall; leaves long, rather narrow, gradually pointed; fascicles of spikelets sessile, within clasping very short ... floral leaves, somewhat paniculated; non-pistillate spikelets without any stalklets, four basal, one or two higher, sometimes long-ciliolated, usually producing only one inner bract; outer bract of the fruiting spikelet soon hardening; awn long, somewhat twisted. "Kangaroo-grass." **A. ciliata.**

Fruit-bearing spikelet completely silklike-invested outside.

Tall; leaves long, rather narrow, gradually pointed; fascicles of spikelets stalked, within clasping very short floral-leaves, somewhat paniculated; non-pistillate spikelets without any stalklets, glabrous, four basal, one or two higher, usually producing two inner bracts and all staminate; outer bract of the fruiting spikelet soon hardening; awn long, somewhat twisted. **A. avenacea.**

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IMPERATA.

2032. Spike-like panicle somewhat cylindrical, whitish.

Tall and firm; leaves long, rigid, hardly spreading; inflorescence often rather elongated; spikelets very small; bracts very tender, almost colorless, transparent; stigmas soon dark-colored. "Sugar-Reedgrass."

I. arundinacea.

HEMARTHRIA.

2033. One of the outer bracts often hooked-pointed.

Creeping, much depressed, permanently vivid-green; stems rigid, compressed; leaves almost in two rows, broadish-linear, nearly flat; spikes rather long, but narrow, singly stalked; spikelets appressed, very small.

H. compressa.

ZOYSIA.

2034. Hardened outer bract quite closed towards the base.

A coast-grass, far-creeping, sometimes very depressed; stems always short and often quite dwarfed; leaves in two rows, short but rigid, sharply pointed; spike very narrow, often assuming a dark tinge; spikelets very small, their stalklets still shorter, thickened upwards.

Z. pungens.

SPINIFEX.

2035. Much beset with silk-like vestiture.

Coast-plant, robust, diffuse, extensively creeping, often straw-colored or pale-greenish; leaves broad-linear, elongated, gradually narrowed upwards, incurved along the margin; floral leaves several or many, often much shorter than the others; staminate and pistillate spikes generally numerous, placed together in very large often solitary clusters, occasionally long-stalked, the rhachis far extended beyond the spikelets, particularly those of the pistillate plant; bracts few to each spikelet, the lower sometimes as long as the others; stigmas elongated; fruit loosely enclosed within the supporting and covering bract.

S. hirsutus.

Glabrous.

Desert-plant, diffuse, lax, light-colored, spreadingly and often fascicularly branched; leaves usually short and flat, on conspicuous clasping stalks; one of the floral leaves occasionally elongated, the rest very short or rudimentary, but their membranous stalks also ample; clusters of spikelets small; rhachis quite abbreviated; bracts few, rather acute, longitudinally-streaked, the outer membranous; fruit-enclosing bracts shining, smooth, finally brownish; fruit ovate-ellipsoid, brown. **S. paradoxus.**

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SETARIA.

2036. Spike-like panicle small, uninterrupted.

Annual, slender, seldom tall; leaves flat, lax, greyish-green; involucrating bristlets short, soon brownish-yellow, their roughness verging upwards; lowest bract much the smallest; fruit-supporting bract wrinkled. (Possibly immigrated.) **S. glauca.**

OPLISMENUS.

2037. Clusters in the panicle somewhat spicately arranged.

Forest-plant, from dwarf to rather tall, usually beset with hairlets; lower portion of the stem often rooting; leaves flaccid, comparatively broad; panicle rather distantly branched; awns somewhat sticky, but without any roughness, sometimes also developed on the second bract; fruit-supporting bract smooth, shining, somewhat pointed, rather narrow. **O. compositus.**

PANICUM.

2038. Spikelets forming radiatingly terminal spikes.

Depressed and partly creeping; leaves flat, somewhat beset with hairlets; spikes eleven or less, very slender, unilaterally flowering, often purplish- or bluish-dark; spikelets in pairs, one of the two on a stalk, all narrow and mostly glabrous; lowest bract quite minute; second bract longitudinally three-streaked; third bract five-streaked; fruit-supporting bract smooth. (Probably immigrated.) **P. sanguinale.**

Spikelets forming either panicles or crowded into solitary or scattered spikes 2039

2039. Lower branches of the panicle fasciculated or whorled 2040

Panicle spike-like or all its branches and branchlets scattered 2045

2040. Lower branches of the panicle fasciculated 2041

Lower branches of the panicle whorled 2043

2041. Lowest bract very much shorter than the spikelet.

Tall, glabrous; leaves rather long, gradually pointed; panicle widely spreading; spikelets scattered, stalked, rather narrow, acute, pale; lowest bract truncate-blunt; second and third bracts five- or seven-streaked; stamens only in the pistillate flower; fruit-supporting bract smooth and shining. **P. decompositum.**

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Lowest bract nearly or fully half as long as the spikelet 2042

2042. Totally glabrous.

Tall; leaves long; panicle widely spreading; spikelets scattered, stalked, somewhat pointed, pale; lowest bract also acute; second and third bracts five-streaked; fruit-supporting bract smooth and shining. **P. Mitchelli.**

Leaves and their stalks beset with hairlets.

Often tall; leaves broad-linear, mostly flat; nodes of the stem conspicuously invested with spreading hairlets; panicle amply spreading; spikelets scattered, stalked, acute, glabrous, pale; lowest bract fully half as long as the spikelet; second and third bracts five- or seven-streaked; fruit-supporting bract smooth and shining. **P. effusum.**

2043. Spikelets glabrous.

Rather tall, glabrous; leaves greyish-green, the membrane at their inner base elongated, almost entire; panicle widely spreading; spikelets scattered, rather elongated, ovate-lanceolar, stalked; lowest bract blunt, more than half as long as the spikelet, three- or five-streaked; second and third bracts acute, five- or seven-streaked; fruit-supporting bract smooth and shining. **P. prolutum.**

Spikelets beset with silk-like vestiture 2044

2044. Second bract with five or seven longitudinal streaks.

Often somewhat depressed; leaves flat, beset with short soft hairlets; lower divisions of the panicle spike-like but thin; spikelets narrow, rather elongated, in pairs along one side of the panicle-branches or rhaches, one of each pair on a short stalk; lowest bract quite minute; third bract seven- to eleven-streaked; fruit-supporting bract smooth, acute, shining. **P. coenicolum.**

Second bract with three longitudinal streaks.

Often rather tall; leaves flat, generally beset with short hairlets; lower branches of the panicle spike-like, finally much spreading; spikelets rather elongated, narrow, acute, often paired along one side of the panicle-branches or rhaches, one of each pair on a stalk; lowest bract quite minute; third bract five-streaked; fruit-supporting bract smooth, shining. **P. divaricatissimum.**

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2045. Panicle spikelike-contracted 2046

Panicle spreading-branched 2048

2046. Spikelets beset with silk-like vestiture.

Leaves mostly glabrous; panicle consisting of but few elongated scattered and very slender branches, or occasionally reduced to one or two spikes; lowest bract very minute; the second bract three-streaked; the third bract five-streaked; fruit-supporting bract smooth.
P. leucophaeum.

Spikelets almost or quite glabrous 2047

2047. Spikelets very small, in unilaterally flowering distant spikes.

Leaves from broad- to narrow-linear, involute along the margin, glabrous; spikes short, rather distant along the undivided upper end of the stem, sometimes reduced to mere clusters, their rhachis often setular-pointed; spikelets usually close together in two rows, almost ovate-ellipsoid, pale; lowest bract ovate, about half as long as the others; second and third bracts five-streaked and empty; fruit-supporting bract wrinkled. **P. gracile.**

Spikelets relatively large, almost racemously arranged.

Never tall, somewhat prostrate; leaves rather short, flat, broadish; branches of the inflorescence very short, produced from below the spikelets into an awn-like rough elongation; lowest bract minute, blunt; second and third bracts gradually much pointed, streaked by several venules; fruit obovate-ellipsoid. **P. paradoxum.**

2048. Branches of the inflorescence awnlike-spinescent.

Semiaquatic, much elongated and spreading; stems and branches compressed; leaves broad, flat, their stalks lax; branches of the panicle spreading, very thin, scattered, mostly undivided; spikelets appressed but short-stalked, scattered, comparatively long and proportionately narrow, much pointed; lowest bract minute, blunt; second and third bracts many-streaked; stamens also within the third bract; fruit-supporting bract remaining tenderly membranous, thus allowing of a ready secession of the fruit. **P. spinescens.**

Branches of the inflorescence without any awn-like elongations 2049

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2049. Spikelets mostly crowded along the branches of the panicle 2050

Spikelets all scattered 2052

2050. Fruit-supporting bract beset with minute hairlets.

Rigid, the lower portion of the stem depressed and rooting; branches elongated; leaves mostly broadish-linear, flat, prominently margined; panicle rather short, occasionally reduced to an interrupted spike; lowest bract very small; second and third bract three- or five-streaked.

P. marginatum.

Fruit-supporting bract glabrous 2051

2051. All bracts simply acute.

Rigid, the lower portion of the stem depressed and rooting; leaves narrow but rather flat, often beset with hairlets; spikelets obliquely ovate, turgid, glabrous or slightly ciliolated; lowest bract about one-third as long as the spikelet; second and third bract three- or five-streaked, stamens in the third; fruit-supporting bract scarcely smooth. **P. repens.**

Nearly all the bracts much pointed or some awned.

Annual or of short duration, often diffuse or somewhat prostrate; stems rather succulent, from dwarf to very long; leaves broad-linear, flat; leaf-stalks without any membranous or ciliolar expansion at the inner end; spikes or clusters of spikelets in a dense almost unilateral panicle, sometimes emitting awn-like hairlets; spikelets comparatively large; bracts often rough from very short rigid scattered hairlets; lowest bract about half as long as the next; second and third bract three- or five-streaked, a long awn not rare on the third bract; fruit-supporting bract smooth and very shining.

P. Crus Galli.

2052. Spikelets always one-fruited, the outer bract about half as long as the next.

Ascendant, almost glabrous; leaves broad-linear, flat; panicle spreading, with capillary divided branches; spikelets dark-colored, scattered, turgidly ovate-lanceolar, separately short-stalked, glabrous; lowest bract three-nerved; second and third bract five-streaked; fruit-supporting bract smooth and shining.

P. melananthum.

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Spikelets often two-fruited, the outer bract about as long as the next.

Ascending, somewhat creeping or producing offshoots; leaves broad, often narrow-lanceolar, quite flaccid, flat; panicle spreading, almost capillarily branched; spikelets scattered, separately stalked, turgid, often in part dark-colored; all bracts blunt, the outer finely several-streaked; fruit-supporting bract slightly beset with very minute hairlets. (Isachne Australis.) **P. atro-virens.**

NEURACHNE.

2053. Lowest bract with an opening at the middle or towards the base.

Desert-plant, never tall; leaves short, broadish, usually flat; spike cylindrical, rather slender; opening of the lowest bract at its thickened upper margin conspicuously beset with hairlets, at first membranously closed; second bract almost blunt; fruit finally dropping from the supporting and the covering bract. **N. Mitchelliana.**

Lowest bract without any opening 2054

2054. Lowest bract closely ciliolated.

Desert-plant, never tall; leaves mostly narrow, somewhat rigid; spike ellipsoid-cylindrical, occasionally almost globularly shortened, often assuming a somewhat dark color; lowest bract and the next gradually much pointed, seven- to eleven-streaked, both conspicuously ciliolated; fruit finally dropping from the supporting and the covering bract. **N. alopecuroides.**

Lowest bract almost glabrous.

Desert-plant, never tall; leaves narrow, longitudinally incurved; spike narrow-cylindrical, never dark-colored; lowest bract greenish, five-streaked, the next longer and much more pointed, seven-streaked; fruit finally dropping from the supporting and the covering bract. **M. Munroi.**

TRAGUS.

2055. Annual and relatively dwarf.

Often of diffuse growth; leaves flat, lax; spike singly terminal, somewhat raceme-like; lowest bract rudimentary or undeveloped; second bract the largest, somewhat pointed, bearing numerous minute hooked prickles exteriorely; fruit ellipsoid, free within its own thin bracts. **T. racemosus.**

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ERIOCHLOA.

2056. Spikes few or several, scattered.

Rather tall; leaves generally flat; spikes forming a contracted panicle, very narrow, unilaterally flowering, often beset with soft hairlets; spikelets pointed, their short stalks at the summit dilated and there often dark-colored; fruit-supporting bract ending in a very short awn; fruit free within its bracts.

(E. punctata.) **E. polystachya.**

ALOPECURUS.

2057. Stems prostrate in the lower portion, thence often abruptly bent upwards.

Annual or of short duration; leaves lax, flat; leaf-stalks often somewhat inflated, particularly those of the upper leaves; spike-like inflorescence dense, rather short, cylindrical; outer bracts along their keel ciliolate, only near the base connected; fruit-supporting bract emitting from near or below the middle a very short awn; fruit free within its bracts, but retained by them. (Possibly immigrated.) **A. geniculatus.**

SPOROBOLUS.

2058. Mostly prostrate.

Coast-plant, never tall; leaves rigid, short, narrow, gradually pointed, longitudinally incurved, almost forming two rows; panicle short, closely contracted; outer and inner bracts of nearly equal length, often somewhat dark-colored; stamens three; fruit obovate-ellipsoid, minute. **S. Virginicus.**

Mostly erect 2059

2059. Panicle spikelike-contracted.

Rigid; lower leaves elongated, upper but few, all narrow, gradually pointed, longitudinally incurved; panicle rather long but almost cylindrically contracted, occasionally interrupted; bracts somewhat dark-colored, the outer transparent, hardly blunt, unequal in length but both shorter than the inner; fruit obovate- or globular-ellipsoid, minute. **S. Indicus.**

Panicle quite spreading.

Desert-plant, never tall; leaves narrow, very acute; panicle somewhat elongated, its lowest branches whorled; bracts pointed, the lowest quite narrow and shorter than the two next, all somewhat dark-colored; anthers very minute; fruit obovate-globular, minute, loosely enveloped.

... **S. Lindleyi.**

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PENTAPOGON.

2060. Middle awn slightly twisted.

Seldom tall; leaves short, principally basal, mostly quite narrow, gradually pointed, often beset with hairlets; panicle contracted; spikelets rather large; outer bracts of almost equal length, pointed; rhacheolar stalklet of flower very short, silklike-invested; middle awn seldom very long; fruit loose within its bracts.

P. Billardieri.

ANISOPOGON.

2061. Spikelets few or several, hardly paniculated.

Often tall; leaves much elongated, longitudinally involute, gradually pointed; spikelets on thin mostly elongated stalks, drooping; rhacheole very short; outer bracts very long, but proportionately narrow, membranous, gradually much pointed; fruit-supporting bract outside imperfectly beset with short soft hairlets; fruit-covering bract firm; anthers long, but quite narrow; styles about as long as the stigmas; fruit beset with minute hairlets at and toward the summit. **A. avenaceus.**

ARISTIDA.

2062. Awn three-branched from far above its base.

Desert-plant, rather tall, occasionally dwarfed; leaves through longitudinal involution almost filiform, much pointed; panicle contracted and usually somewhat twisted; outer bracts longer than the inner, generally of a purplish hue, much pointed, the lowest shorter than the other; stalklet very short, producing hairlets at the summit; awn very long, its undivided portion thinly filiform, but spirally twisted, jointed at the base, its divisions slightly rough; fruit loose within its bracts, narrow. **A. arenaria.**

Awn three-branched from its base 2063

2063. Branches of the panicle very much elongated, with spikelets towards the summit only.

Desert-plant, rather tall; leaves long and narrow, much pointed; panicle elongated, distantly branched; spikelets on very long and thin stalks; outer bracts of unequal length; awn rather long, without any torsion; fruit narrow, loose within its bracts, comparatively long.

A. leptopoda.

Branches of the panicle short 2064

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2064. Awn of about the length of the spikelet.

Seldom tall; leaves rather short, much pointed, flat towards their base; panicle somewhat spreading, its branches rather short and rigid; spikelets on very short stalks, few or several; outer bracts shorter than the inner, often purplish-dark; awn without any torsion, sessile and continuous with its bract, the three divisions very short; fruit narrow, loose within its bracts. **A. vagans.**

Awn of considerably greater length than that of the spikelet 2065

2065. Spikelets almost racemously approximated.

Rather tall; leaves very narrow, filiform upwards, much pointed; panicle rather long, contracted, its branches mostly short; spikelets from rather few to several, sessile or on very short stalks; outer bracts often purplish-dark, finely pointed, about as long as the inner; awn sessile, without any torsion, continuous with the fruit-supporting bract, its divisions of moderate length; fruit narrow, loose within its bracts. **A. calycina.**

Spikelets almost fascicularly approximated.

Desert-plant, somewhat diffuse, never tall; leaves upwards almost filiform; panicle dense, comparatively broad, its branches short; spikelets numerous; outer bract about half as long as the next, both gradually much pointed, the second longer than the inner bracts; awn sessile and continuous with its bract, without any torsion, its divisions rather long, slightly rough; fruit narrow, loose within its bracts. **A. Behriana.**

STIPA.

2066. Fruit-supporting bract beset with hairlets 2067

Fruit-supporting bract glabrous 2073

2067. Membrane at the inner base of the leaves without any cilioles 2068

Membrane at the inner base of the leaves much changed into cilioles 2070

2068. Membrane at the inner base of the leaves elongated.

Slender, somewhat tall; leaves rather short, narrow, involute along the margin; panicle spreading, its branches mostly short, nearly glabrous; outer bracts gradually pointed; fruit-supporting bract much abbreviated; awns long, capillary, somewhat bent, slightly rough, hardly twisted; fruit loose within its bracts. **S. setacea.**

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Membrane at the inner base of the leaves abbreviated 2069

2069. Outer bracts colorless.

Coast-plant, tall and quite straight; leaves very long, filiform-cylindrical, very rigid, pungent, often light-green; panicle long, much contracted, somewhat twisted; outer bracts elongated, much pointed; fruit-supporting bract beset with short but spreading somewhat deciduous indument; awn moderately long, capillary, flexuous, glabrous; fruit loose within its bract. **S. teretifolia.**

Outer bracts yellowish.

Often tall; leaves mostly long, almost filiform from marginal involution; panicle elongated, rather contracted, its branches often short; spikelets rather large; outer bracts much pointed, inner bracts somewhat shorter; awn long, only slightly invested with very short hairlets or almost glabrous; fruit loose within its bracts. **S. flavescens.**

2070. Outer bracts at their summit somewhat truncated and denticulated.

Tall; leaves long, narrow, involute along the margin; panicle elongated, somewhat spreading; spikelets large, blunt at the base; awn long, usually invested with very short hairlets along its lower portion; fruit loose within its bracts. **S. pubescens.**

Outer bracts much pointed 2071

2071. Awn at least to the middle beset with hairlets.

Generally tall; leaves long, narrow, often marginally inflexed; panicle long, somewhat contracted, its branches almost glabrous; spikelets large; outer bracts gradually pointed, much exceeding the inner bracts; awn very long, its vestiture conspicuous; fruit loose within its bracts. **S. semibarbata.**

Awn glabrous 2072

2072. Outer bracts ending in three points, the two lateral short.

Desert-plant, often tall; leaves long, often involute along the margin; panicle elongated, moderately spreading; spikelets rather large; middle point of outer bracts the longest; fruit-supporting bract turgid, its vestiture greyish, appressed and shining; awn rather long, twisted, slightly rough; fruit loose within its bracts. **S. aristiglumis.**

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Outer bracts ending in one long point.

Rather tall; leaves almost filiform from marginal involution, gradually pointed; panicle elongated, generally somewhat dense, its branches almost capillary and sometimes twisted; fruit-supporting bract quite small, its vestiture appressed and shining; awn long, capillary, glabrous; fruit loose within its bracts. **S. crinita.**

2073. Panicle very dense, almost spikelike-contracted.

Often tall, always robust; leaves elongated, rather flat, gradually much narrowed upwards; panicle pale, somewhat cylindrical in outline, attaining considerable length; spikelets very numerous, quite small; bracts of almost equal length; awn very thin, many times longer than the fruit-supporting bract, without any torsion, infraterminal; stamens one or two or rarely three; fruit loose within its bracts. **S. Dichelachne.**

Panicle open, variously spreading 2074

2074. Branches of the panicle short, glabrous.

Seldom tall; leaves comparatively short, rather flat but gradually much narrowed upwards; panicle only moderately spreading; awn generally about three times longer than the bracts, almost without any torsion, slightly rough; stamens three; fruit loose within its bracts. **S. micrantha.**

Branches of the panicle long, provided with vestiture 2075

2075. Panicle-branches beset with very short hairlets and bearing rather small spikelets.

Desert-plant, dwarf; leaves rather flat, closely beset with very short vestiture; branches of the panicle rather long, much spreading, the lower whorled, the upper mostly fascicled, their vestiture soft, whitish and patent; outer bracts many times shorter than the awn; fruit loose within its bracts. **S. Tuckeri.**

Panicle-branches beset with very conspicuous hairlets and bearing rather large spikelets.

Desert-plant, finally very tall, branched; leaves narrow, glabrous; branches of the panicle very long, weak, soon spreading, the lower whorled, their vestiture soft, whitish, patent; outer bracts several times shorter than the awn; fruit loose within its bracts. **S. elegantissima.**

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AMPHIPOGON.

2076. Inflorescence almost cylindrical, short.

Seldom tall; leaves comparatively short, quite narrow, pointed, somewhat rigid; spike-like panicle dense, occasionally shortened to an ovate-ellipsoid form; outer bracts broadish, but short; awns of the fruit-supporting and fruit-covering bracts lobe-like and ciliolated, finally somewhat divergent; fruit loose within its bracts.

A. strictus.

ECHINOPOGON.

2077. Inflorescence often almost capitular.

Rather tall, somewhat harsh; leaves comparatively short, nearly flat, rather rough; inflorescence varying from narrow-ellipsoid to almost globular, greenish; spikelets quite small; lowest bract about as long as the next; inner bracts slightly longer; awn straight, rough, about twice as long as the pertaining bract; fruit loose within its bracts.

E. ovatus.

AGROSTIS.

2078. Outer bracts much shorter than the inner, truncate-blunt.

Rather dwarf; leaves very narrow, involute along the margin; panicle short, somewhat spreading; spikelets remarkably small; outer bracts broad in proportion to their length; fruit-supporting bract awnless; additional rhacheolar stalklet present, flowerless, glabrous.

A. breviglumis.

Outer bracts about as long as the lowest inner or longer, usually acute 2079

2079. Panicle contracted 2080

Panicle spreading 2084

2080. Lowest bracts about as long as the fruit-supporting bract 2081

Lowest bracts considerably longer than the fruit-supporting bract 2082

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2081. **Awn from near the summit of the fruit-supporting bract.**

Alpine, rather dwarf, but somewhat robust; leaves broadish, nearly flat, never of conspicuous length; panicle spike-like, often of a darkish hue; spikelets very small; fruit-supporting bract slightly shorter than the outer bracts, minutely awned; additional rhacheolar stalklet glabrous.

A. nivalis.

Awn from near the middle of the fruit-supporting bract.

Seldom tall; leaves narrow, but nearly flat; panicle rather short, almost cylindrical or scantily open; spikelets much crowded; fruit-supporting bract nearly as long as the outer bracts, acute; awn slightly twisted and somewhat exserted; rhacheolar extension flowerless, beset with minute hairlets. ... **A. densa.**

2082. **Awn absent.**

Alpine, often dwarf; leaves narrow, longitudinally bent inward, the lower leaves rather elongated; panicle abbreviated, closely or moderately contracted, capillary-branched; spikelets somewhat violet-darkish; fruit-supporting bract awnless, considerably shorter than the outer bracts; fruit-covering bract undeveloped; additional rhacheolar stalklet absent. **A. Muelleri.**

Awn present, but short 2083

2083. **Flowerless stalklet within the spikelet quite rudimentary or absent.**

Often tall; leaves generally broadish, flat or along the margin somewhat incurved, gradually pointed; panicle often long, almost cylindrical or scantily open; spikelets always crowded; fruit-supporting bract terminating in four extremely short setular points; its awn arising from below the middle, hardly semi-exserted; additional rhacheolar stalklet almost or quite undeveloped.

A. quadriseta.

Flowerless stalklet within the spikelet conspicuous.

Rather tall and somewhat robust; leaves hardly long, gradually pointed; panicle almost cylindrical or scantily open; spikelets all crowded; fruit-supporting bract nearly as long as the outer bracts, somewhat rough outside, slightly denticulated at the summit; its awn arising from below the middle, semi-exserted; additional rhacheolar stalklet generally ciliolated, seldom bearing a bract.

A. montana.

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2084. Lowest bracts considerably longer than the fruit-supporting bract.

Usually tall; leaves generally flat, elongated and broadish; panicle very spreading, the spikelets singly terminating capillary mostly elongated branchlets; fruit-supporting bract usually somewhat beset with minute hairlets outside, occasionally two-pointed; its awn arising from near or below the middle, about semi-exserted, slightly bent; additional rhacheolar stalklet beset with short hairlets, but bractless. **A. Solandri.**

Lowest bracts about as long as the fruit-supporting bract 2085

2085. Flowerless stalklet within the spikelet absent ... 2086

Flowerless stalklet within the spikelet present ... 2087

2086. Awn present.

Slender, seldom tall; leaves quite narrow, gradually pointed; branches of the panicle capillary; spikelets mostly short-stalked; awn from near the middle of the fruit-supporting bract and considerably exceeding its length, almost straight, slightly rough. **A. venusta.**

Awn absent.

Often rather tall; leaves narrow, gradually pointed; panicle elongated, its branches subtile-capillary, the lower whorled; spikelets very small; fruit-supporting bract blunt, rather shorter than the lower bracts, neither provided with any stalklet of its own, nor surrounded by hairlets; fruit-covering bract almost or quite undeveloped. **A. scabra.**

2087. Awn far infra-terminal.

Alpine, tall; leaves flat, gradually pointed; panicle elongated, its branches mostly scattered; spikelets of rather conspicuous size; awn from near the middle of the fruit-supporting bract, extremely short, somewhat bent, deciduous. **A. frigida.**

Awn nearly terminal.

Rather tall, but generally slender, sometimes bent downward; leaves usually flat, gradually pointed; panicle elongated, slightly or moderately spreading; outer bracts about as long as the two inner; awn very short, thus slightly or hardly reaching beyond the summit of the fruit-supporting bract, anthers very short; rhacheolar stalklet often beset with minute hairlets. **A. rudis.**

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CHLORIS.

2088. Spikelets on the rayed spikes narrow and pointed.

Seldom tall; leaves broadish, flat, greyish-green, their stalks often compressed; spikes from few to numerous, soon very spreading, often of a darkish somewhat violet hue, occasionally by elongation of the axis of the inflorescence separated into more than one whorl; spikelets rather small, unilateral-biseriate, hardly crowded; lowest bracts finely pointed; fruit-supporting bract rather conspicuously awned, so also the always narrow bract on the accessory stalklet; fruit loose within its bracts. **C. acicularis.**

Spikelets on the rayed spikes broadish and truncate-blunt.

Seldom tall, often somewhat prostrate in its lower portion; leaves rather broadish, flat, their stalks generally compressed; spikes from few to several, rather long, soon very spreading; spikelets very small, unilateral-biseriate; lowest bract extremely short and narrow, the next fine-pointed; fruit-supporting bract roundish-blunt, slightly ciliolated, its awn straight, rather conspicuous, but very thin; sterile flower consisting only of a truncate bract; fruit loose within its bracts. **C. truncata.**

CYNODON.

2089. Lowest bracts shorter than the fruit-supporting bract.

Prostrate and partly ascending, forming dense patches, rooting from the lower nodes; leaves short, narrow, nearly flat, acute, almost in two rows; spikes very narrow, usually from two to five, occasionally six or seven, often of a darkish somewhat violet hue; spikelets extremely small, unilateral-biseriate; lowest bract narrow; fruit-supporting bract slightly ciliolated, rather acute, laterally much compressed; rhacheole extended into a very short glabrous flowerless stalklet; fruit loose within its bracts. "Doorva-Grass." **C. Dactylon.**

AIRA.

2090. Panicle much expanded.

Tall, ample-tufty; leaves long, rather rigid, rough above, flat or somewhat involute along the margin; panicle lax, elongated, its branches much whorled, less expanded before and after flowering time; spikelets small, compressed, about as broad as long, yellowish- or purplish-tinged or sometimes pale; fruit-supporting bract hardly extending beyond the outer, denticulated at the summit; awn emanating from near the middle of its bract and barely reaching beyond its summit, straight; rhacheolar bractless stalklet generally present; fruit slightly furrowed on the outer side. **A. caespitosa.**

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Panicle much contracted.

Seldom tall; leaves rather long, hardly rigid, almost flat, gradually pointed; panicle rather short, in its lower portion often somewhat interrupted, mostly pale; spikelets much compressed; fruit-supporting bract finely two-pointed, emitting a short somewhat bent and rough awn from near the summit; rhacheolar extension seldom bract-bearing. **A. subspicata.**

DISTICHLIS.

2091. **Leaves short, almost in two rows, somewhat pungent.**

Chiefly a coast-plant, prostrate, forming ample patches; stems and branches leafy up to the inflorescence; leaves rigid, narrow, incurved along the margin; spikelets few, soon dull-yellowish, much compressed, lanceolar-elliptical; flowers several or sometimes many, closely approximated; bracts simply or hardly acute; those supporting the stamens or the fruit several-streaked.
D. maritima.

AGROPYRON.

2092. **Fruit-supporting bract shorter than its awn.**

Rather tall, somewhat harsh; leaves chiefly scattered along the stem; narrow, flat or incurved along the margin; spikelets elongated, almost appressed, alternating, often somewhat distant; flowers several or occasionally many; fruit-supporting bracts narrow, gradually passing into the straight or slightly spreading awn. **A. scabrum.**

Fruit-supporting bract longer than its awn 2093

2093. **Spikelets almost appressed, beset with very short hairlets.**

Rather dwarf; leaves chiefly near the base of the stem, flat or incurved along the margin; spike comparatively short; spikelets rather crowded; flowers few or several; fruit-supporting bracts pungent. **A. velutinum.**

Spikelets very spreading, almost glabrous.

Rather dwarf; leaves chiefly near the base of the stem, flat or incurved along the margin; spike comparatively short; spikelets rather crowded; flowers few or several; fruit-supporting bract narrow, pungent.
A. pectinatum.

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BROMUS.

2094. Spikelets from long stalks at last mostly bending over, at first gradually attenuated towards the summit.

Annual, rather tall, beset with short soft hairlets; leaves very flaccid, rather broadish, almost flat, gradually narrowed upwards; panicle very lax, somewhat unilateral; spikelets comparatively large, several-flowered; anthers very short; fruit-supporting bract usually seven-streaked, convex along the middle, cleft at the apex; awn conspicuous, straight, almost terminal, rough; fruit slender, at the summit bearing minute hairlets. **B. arenarius.**

FESTUCA.

2095. Leaves comparatively short.

Here alpine, seldom tall, quite slender; leaves very narrow, involute along the margin, very thin upwards, few on the stems; panicle short, much contracted, especially at last, its branches capillary-thin; spikelets few- or several-flowered; fruit-supporting bract narrow, gradually ending in a very short awn, somewhat rough outside; fruit rather narrow, blunt. **F. duriuscula.**

Leaves quite long 2096

2096. Leaves very rigid.

Maritime, tall, robust, amply tufted, soon assuming a dull-yellowish or pale hue; leaves straight, by marginal involution almost cylindrical, much narrowed upwards, pungent, beset with hairlets on the upper much concealed side; panicle contracted, usually long; spikelets rather large, few- or several-flowered, awnless; fruit-supporting bract firm, five-streaked, beset with very thin vestiture outside; fruit ovate-ellipsoid, turgid on one side. **F. litoralis.**

Leaves hardly rigid.

Generally sub-alpine, tall, robust, rather harsh; leaves comparatively broad, almost flat, somewhat rough, the upper less elongated; panicle long, moderately or much spreading; spikelets broadish, few- or several-flowered, occasionally dull-purplish; fruit-supporting bract imperfectly five- or seven-streaked, slightly lobed at the summit, minutely awned or awnless; styles slightly lateral; fruit ovate-ellipsoid. **F. Hookeriana.**

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ELEUSINE.

2097. Spikes usually four, broad in proportion to their length.

Annual, generally dwarf, seldom tall; stems often near the base prostrate and rooting; leaves flaccid, rather short, broadish, flat, pointed; spikes from two to eight or exceptionally one only, usually much spreading, slightly pointed by the protruding apex of the rhachis; spikelets crowded, usually few-flowered; second lowest bract ending in a short rather thick and slightly curved elongation; fruit-supporting bract much pointed; seed readily seceding from its pericarpous envelope, short but comparatively broad, almost granular-rough.

E. cruciata.

ERAGROSTIS.

2098. Spikelets usually with only few flowers.

Annual, weak, generally dwarf; leaves flat; panicle much spreading, with capillary partly whorled branches and branchlets; spikelets minute; flowers two to six, rarely seven to ten flowers; fruit-supporting bracts transparent, blunt; anthers very minute, almost cordate, dark-violet; fruit ovate-ellipsoid, smooth, shining, reddish-brown.

E. tenella.

Spikelets usually with many flowers **209**

2099. Spikelets abbreviated.

Perennial, rather tall; leaves narrow, longitudinally involute; panicle contracted, its lower branches often distant; fruit-supporting bracts prominently venular-streaked, opaque; stamens often two; fruit ovate-ellipsoid.

E. diandra.

Spikelets elongated **210**

2100. Fruit-supporting bracts transparent.

Annual, rather or quite tall, but weak, bearing hairlets only at the base of the leaves and in some of the axils of the panicle; leaves flat, narrow; panicle much elongated, laxly spreading, its branches capillary; spikelets narrow, separately stalked, of a somewhat dark tinge, occasionally reduced to five flowers; fruit-supporting bract with only the carinular venule prominent; fruit pellucid, ovate-ellipsoid, brownish.

E. pilosa.

Fruit-supporting bracts opaque **2101**

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2101. Stem-base and lowest leaf-stalks enveloped in a whitish dense vestiture.

Desert-plant, perennial, seldom tall, rather rigid, often of a pale or dull-yellowish hue; leaves narrow, longitudinally involute, much pointed; panicle short-branched; spikelets conspicuously compressed, hardly provided with any stalks of their own; flowers sometimes very numerous, rarely reduced to six, always closely approximated; fruit-supporting bract occasionally of a dull-purplish tinge, their venular streaks rather prominent; fruit ovate-ellipsoid. **E. chaetophylla.**

Stem-base and lowest leaf-stalks glabrous 2102

2102. Spikelets conspicuously compressed, broadish.

Rather tall, flowering for a long while; leaves flat or oftener somewhat inflexed along the margin; panicle spreading, almost straightly but rather scantily branched; spikelets often assuming a somewhat dark hue, occasionally clustered, without any conspicuous stalks of their own; flowers seldom very numerous, always closely approximated; stamens three or two; fruit-supporting bract prominently venular-streaked; fruit ovate-ellipsoid. **E. Brownii.**

Spikelets almost cylindrical, very narrow 2103

2103. Spikelets straight, the fruit-supporting bracts faintly streaked.

Perennial, seldom tall; stems very thin; leaves very narrow, longitudinally involute, pointed; panicle rather contracted, short-branched; spikelets straight, provided with short stalks of their own; flowers many; fruit-supporting bract almost blunt. **E. lacunaria.**

Spikelets curved, the fruit-supporting bracts strongly streaked.

Desert-plant, perennial, seldom tall; stems very thin; leaves short and narrow, longitudinally involute, pointed; panicle short-branched, moderately spreading; spikelets perceptively curved, without any conspicuous stalks of their own; flowers many, sometimes very numerous, always closely approximated; anthers very short; fruit-supporting bract almost blunt; fruit ovate-ellipsoid. **E. falcata.**

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POA.

2104. Root thickened into one or more tuberous enlargements.

Desert-plant, hardly tall; protuberances of the root pale, at intervals placed in one row; leaves elongated, narrow, nearly flat or along the margin incurved; panicle rather short, somewhat spreading, scantily capillary-branched; spikelets comparatively broad, from ovate to almost roundish, rather turgid; flowers few or several; lowest bract sometimes purplish; fruit-supporting bract five-streaked, slightly ciliolated, blunt. **P. nodosa.**

Root without any tuberous enlargements 2105

2105. Perennial 2106

Annual 2111

2106. Floating or creeping.

Semi-aquatic, much elongated; stem somewhat compressed; leaves flat, comparatively broad; membrane inside at the upper end of the leaf-stalk elongated; panicle very long but narrow, somewhat unilateral, its branches simple, mostly distant, bearing at best only few spikelets each, the lower at first spreading, at last almost erect; spikelets slender, rather pale-greenish, mostly appressed; flowers several or many; fruit-supporting bract generally seven-streaked, blunt, convex along the middle. "Manna-Grass." **P. fluitans.**

Erect or diffuse 2107

2107. Stem much branched.

Swamp-plant, very tall, widely and often fascicularly branched, very rigid; leaves distant, most of them marginally involute particularly upwards; panicle elongated, generally much spreading; spikelets shining; rhacheole glabrous; flowers several or few, seldom many; fruit-supporting bract lax, thin, three-streaked, somewhat pellucid, blunt. "Bamboo-Grass." **P. ramigera.**

Stem almost or quite branchless 2108

2108. Fruit-supporting bracts almost granular-rough outside.

Forest-plant, always tall, sometimes enormously elongated, yet not of long duration and hardly rigid; leaves very long, almost flat, proportionately broad; membrane inside at the upper end of the leaf-stalk elongated, without ciliolation; panicle often very long, spreading, thinly

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branched; spikelets few only to each main branch of the panicle, rather turgid; flowers few or several; fruit-supporting bract blunt, five-streaked, dark-brownish in age. **P. dives.**

Fruit-supporting bracts smooth 2109

2109. Fruit-supporting bracts seven- or nine-streaked.

Rather tall; leaves flat, hardly pointed; membrane inside at the upper end of the leaf-stalk conspicuous; panicle spreading, often elongated, capillary-branched; spikelets much compressed, ovate- or elliptic-lanceolar; pale- or yellowish-green; flowers several or few; fruit-supporting bract blunt, beset with shining hairlets outside towards the base. **P. Fordeana.**

Fruit-supporting bracts five-streaked 2110

2110. Fruit adherent to the covering bract.

Coast-plant, finally tall, rigid, often amply tufted; leaves very long, involute along the margin, gradually pointed; panicle elongated, usually much contracted; spikelets mostly crowded, often early dull-yellowish; flowers few or occasionally reduced to three; fruit-supporting bract towards the base beset with short crisped hairlets; fruit ellipsoid, somewhat pointed, with a broad furrow at the upper side. **P. Labillardierii.**

Fruit free within its bracts.

Generally tall, often amply tufted; leaves flat or longitudinally somewhat or quite incurved, gradually pointed, the lower particularly long; panicle elongated, sometimes much so, moderately or considerably spreading; spikelets rather short; flowers few, hardly in contiguous proximity to each other; fruit-supporting bract towards the base usually beset with short crisp hairlets, five-streaked. **P. caespitosa.**

2111. Fruit-supporting bracts five-streaked.

Coast-plant, seldom tall; soon assuming a dull yellowish hue; leaves very narrow, quite straight, through marginal involution filiform, gradually pointed; panicle much contracted; spikelets very narrow, many almost or quite without stalks of their own; rhacheole glabrous; flowers several or few; fruit-supporting bract firm, convex along the middle, glabrous; fruit ellipsoid, concave on the upper side. **P. syrtica.**

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Fruit-supporting bracts seven- to eleven-streaked.

Desert-plant, dwarf; stems very thin, often purplish; leaves flat, narrow, lax; membrane inside at the upper end of the leaf-stalk conspicuous; panicle small, slightly spreading, few-branched; spikelets much compressed, mostly elliptic-ovate; flowers several or few or occasionally reduced to three; fruit-supporting bract thin, blunt, its keel ciliolated towards the base; fruit very slender. **P. lepida.**

TRIODIA.

2112. Tufts very large, with extremely pungent leaves.

Desert-plant, with hardening base, often assuming a pale- or dull-yellowish hue; leaves numerous, very long and rigid, straight, cylindrically convolute, the majority much spreading; panicle long but rather narrow; spikelets somewhat crowded; fruit-supporting bract much streaked, outside towards the base beset with short dense and somewhat shining vestiture, terminated by three blunt denticles; fruit loose within its bracts. "Porcupine-Grass." **T. irritans.**

TRIRAPHIS.

2113. Panicle close and soft, its awns short, without any twist.

Desert-plant, from quite dwarf to somewhat tall, rather weak; leaves simply acute, hardly involute along the margin; panicle often pale-green or purplish; spikelets very numerous, narrow, the lowest flowers fruit-bearing; fruit-supporting bract outside laxly beset with minute hairlets and producing setular denticles between its awns, the middle awn the longest; fruit minute, narrow-ellipsoid, loose within its bracts; seed transparent. **T. mollis.**

ELYTHROPHORUS.

2114. Clusters of spikelets copiously pointed by the minute setular awns.

Annual, dwarf, erect; leaves flat; spikelets in the clusters closely crowded, few-flowered, very short but comparatively broad; fruit-bearing flower the lowest; bracts all narrow, gradually ending in their minute awn; fruit-supporting bract hardly extending beyond the lowest bracts; fruit loose within its bracts. **E. articulatus.**

DIPLACHNE.

2115. Spikelets in a single slender spike.

Annual, rather dwarf; leaves very narrow, also rather short, few on the stem; spikelets small, appressed, verging somewhat unilaterally in the spike; flowers few or several; fruit-supporting bract very short, three-streaked, terminated by two minute tender blunt lobes; awn quite diminutive; fruit loose within its bracts.

D. loliiformis.

Spikelets in a contracted panicle.

Perennial, rather tall; leaves narrow, lax, incurved along the margin; panicle elongated, often only simply ramified; spikelets pale-greenish or somewhat dark-colored, usually unprovided with stalks of their own; flowers from few to several; fruit-supporting bract transparent, three-streaked, short-pointed, but only indistinctly or minutely bilobed; fruit loose within its bracts.

D. fusca.

DANTHONIA.

2116. Bracts supporting the fruits uncleft, minutely denticulated at the summit, without any tufts of hairlets.

Swamp-grass, often tall; leaves almost flat, somewhat pointed; panicle elongated, slightly or considerably spreading; spikelets capillary-stalked, particularly the lower in age bending over; rhacheole beset with short hairlets; flowers ten or less; lowest bracts surpassed by the others; awn one only, slightly infra-terminal, twisted towards the base; fruit ellipsoid, quite loose within its bracts when ripe.

(Amphibromus Neesii) **D. nervosa.**

Bracts supporting the fruits cleft into two lobes, beset with mostly tufted hairlets outside 2117

2117. Bracts supporting the fruits cleft to near the base.

Desert-grass, rather tall; stem-base enveloped in a close whitish vestiture; leaves almost flat; panicle contracted, short-branched; spikelets rather large, seldom numerous; flowers several, hardly reaching beyond the lowest bracts; fruit-supporting bracts hardly ever exceeded by their awn, their tufts of hairlets whitish, arranged in two tranverse rows, their lobes simply pointed; awn twisted towards the base. **D. bipartita.**

Bracts supporting the fruits cleft to near the middle or still less divided 2118

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2118. Bracts supporting the fruits cleft to near the middle, hardly ever exceeded by the awn.

Usually dwarf; leaves very narrow; panicle quite short; its spikelets almost racemously arranged, rather small; flowers few or reduced to three; lobes of the fruit-supporting bracts with tufts of seriated whitish hairlets; awn delicate. **D. carphoides.**

Bracts supporting the fruits cleft to less than the middle, always exceeded by the awn 2119

2119. Normally quite dwarf, with few usually three-flowered spikelets.

Alpine grass, sometimes forming patches; leaves extremely short and narrow, but rigid; spikelets small, sometimes reduced to two, always short-stalked; lobes of the fruit-supporting bracts simply pointed or very slightly awned; hairlets whitish, hardly tufty, forming two irregular transverse rows; awn about twice as long as the lobes, rather rigid; anthers hardly longer than broad; fruit obovate-ellipsoid. **D. panciflora.**

Normally rather tall, with many usually several-flowered spikelets.

2120. Slightly tufted, with often slender and moderately or hardly tall stems.

Seldom dwarfed; leaves generally long, but narrow, often involute along the margin; panicle of spikelets short-branched, moderately or slightly spreading or racemously narrowed; lowest bracts nearly always somewhat surpassing the others; tufts of hairlets of the fruit-supporting bract whitish, usually arranged in two transverse interrupted rows; lowest portion of the middle awn (as in most congeners) spirally but closely twisted; lateral awns variously shorter than the middle one, occasionally almost undeveloped; fruit more narrowed towards the base than towards the summit. **D. penicillata.**

Amply tufted, with often robust and very tall stems.

Alpine grass, very tall and robust, somewhat succulent; leaves very long, almost flat, rather broad; leaf-stalks laxly clasping; panicle much elongated, somewhat spreading; spikelets comparatively large; flowers few or several, sometimes extending beyond the lowest bracts; hairlets of the fruit-supporting bracts whitish, rather irregularly dispersed or hardly tufted. **D. robusta.**

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ARUNDO.

2121. Semi-aquatic, very tall, with ample very soft inflorescence.

Stems renewed annually, very robust and rigid; leaves very long, comparatively also of great breadth, harsh; panicle lax, partly bending downwards, often somewhat grey-purplish; spikelets flaccid; flowers few, rather remote along the rhacheole, almost concealed by the copious but very tender vestiture, the lowest flower imperfect; bracts thinly membranous, shining; fruit-supporting bracts terminating in a straight, weak, awn-like elongation; fruit loose within its bracts. "Thatch-Reed."

A. Phragmites.

RHIZOSPERMAE.

AZOLLA.

2122. Rootlets extensively beset with very subtle fibres.

Fronds succulent, generally somewhat deltoid in outline, pinnatisected, the segments often slightly distant; leaf-like organs crowded on the segments, from almost rhomboid to nearly obovate, rather turgid; generative masses enveloped in a tender membrane; those of each sex separate; caselets containing the numerous antheroids (Antheridia) largest, often globular; those containing the spores often ovate-ellipsoid. (Nourishing often—by symbiosis—an extremely minute algic organism, always restricted either to this species or to others of its congeners). **A. pinnata.**

Rootlets simply capillary.

Fronds succulent, generally somewhat rhomboid or orbicular in outline, pinnatisected, the segments often closely approximated; leaf-like organs crowded on the segments, from almost rhomboid to nearly obovate, rather turgid; organs of fecundation similar to those of the foregoing species. Figure 127. (A. rubra.) **A. filiculoides.**

MARSILEA.

2123. Frond-segments resembling leaflets.

Dwarf, emitting rooting offshoots, glabrous or variously beset with often appressed hairlets; frond-stalks much longer than the segments, solitary or two or more together, very slender; frond-segments small, frequently cuneate-

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rhomboid, occasionally indented; conceptacles oblique, from dimidiate- to roundish-ovate, when moistened bursting into two valves; fruit-masses cylindric-ellipsoid, alternating on an in-growth almost gelatinous and protruding stalk, very spreading, each containing numerous caselets with antheroids and besides spore-caselets few in number with a single spore in each. Figure 128. "Nardoo." **M. quadrifolia.**

PILULARIA.

2124. Fronds stalk-like, coiled during vernation inward.

Quite dwarf; fronds imperfect, merely filiform, very slender, gradually pointed; fruit-masses solitary, hardly stalked, four-celled, valvular-dehiscent, each cell containing as well caselets with numerous antheroids as others with a single spore. **P. globulifera.**

ISOETES.

2125. Fronds stalk-like, straight also during vernation.

Dwarf, always submerged; tufted, without any offshoots; fronds imperfect, succulent, erect or some slightly spreading, comparatively short, very thinly filiform, gradually pointed, seldom numerous; fruit-masses inserted into the inner base of fronds, provided with transverse dissepiments; caselets with numerous antheroids on the inner fronds, caselets with several spores on the outer fronds. **I. Drummondi.**

LYCOPODINAE.

PHYLLOGLOSSUM.

2126. Leaves (or leaf-like organs) several, linear, often about half as long as the stem.

Very dwarf; generally of a pale-yellowish hue; tubers two, one formed annually, small, obversely ellipsoid-clavate, accompanied by one or two or few thickish rootlets; stem solitary, erect, comparatively thick; leaf-like organs rather carnulent, gradually somewhat pointed; spike always one only, cylindric- or ovate-ellipsoid; bracts appressed, somewhat rigid, roundish, at the base protruding, ending in a narrow but blunt apex; spore-caselets firm, renate-orbicular, vertically dehiscent; spores extremely minute. Figure 131.

P. Drummondi.

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SELAGINELLA.

2127. Annual.

Minute, erect; branches few or occasionally none; leaf-like organs all uniform, opposite, spreading, extremely short, mostly linear-lanceolar, pointed, hardly crowded, their carinular venule faint; spikes singly terminating branchlets, but often extending far downward; bracts ovate-lanceolar, spreading; lower spore-caselets of greater size, containing large spores normally to the number of four.
S. Preissiana.

Perennial.

Dwarf, erect or ascending; branches seldom numerous; leaf-like organs all uniform, opposite or nearly so, quite small, spreading in four rows, mostly ovate-lanceolar, their carinular venule prominent; spikes terminating branchlets, rather elongated, somewhat quadrangular; bracts lanceolar-ovate, pointed, protruding at the base; lower spore-caselets of greater size, containing large spores normally to the number of four. **S. uliginosa.**

LYCOPODIUM.

2128. Leaves of two forms, each kind biseriate.

Alpine, dwarf, partly creeping; branches ascending, somewhat flattened; leaves small, slightly decurrent, in two layers, the larger almost semilanceolar, somewhat incurved, the smaller leaves stipule-like, quite narrow, occupying the lower side of the stem and branches, appressed in a direction parallel to that of the larger leaves, blunt or somewhat acute, very thin upwards; spikes ellipsoid-cylindrical, terminal, often solitary, nearly or quite sessile; bracts in four rows, almost rhomboid, often blunt and sometimes minutely appendiculated; spore-caselets renate-orbicular.
L. scariosum.

Leaves all of one form, equally crowded all around the stem and branches 2129

2129. Spikes lateral.

Often creeping at its lower portion, thence ascending or erect, scantily branched; leaves small, linear, gradually pointed, spreading, generally somewhat incurved; spikes solitary, sessile, almost ellipsoid-cylindrical, somewhat tetragonous; bracts appressed, pale-yellowish, finally brownish, roundish, but short-pointed, forming four rows; spore-caselets renate. **L. laterale.**

Spikes terminal 2130

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2130. Leaves very dissimilar to the bracts 2131

Leaves quite similar to the bracts or the transit gradual 2132

2131. Leaves of all the branches almost equal in size.

Rather tall, almost entirely erect, towards the base usually branchless, towards the summit often much branched; leaves small, rather appressed, narrow-lanceolar, gradually narrowed into a short-pointed apex; spikes almost cylindrical, singly terminating the highest branchlets; bracts very thin, somewhat spreading particularly their upper end, from a broad base gradually short-pointed; spore-caselets almost renate. **L. densum.**

Leaves of the fruit-bearing branches much smaller than those of the other branches.

Here alpine, partly creeping, thence ascending or erect; leaves small, crowded, from narrow lanceolar to almost linear, ending in a conspicuous bristlet, spreading but slightly incurved, turning somewhat to one side on the lower portion of the plant; fruit-bearing branches elongated, straight, slender, terminating in very short branchlets; spikes terminal, often in pairs, occasionally three or more together or one only, thin-cylindrical; bracts appressed, from a broad base gradually narrowed, often setular- and spreading-pointed; spore-caselets renate, pale-yellow. "Medicinal Clubmoss."
(L. Magellanicum.) **L. clavatum.**

2132. Short and generally erect.

Chiefly alpine, tufted, robust, often dichotomously few-branched; leaves rather large, firm, lanceolate-linear, mostly appressed; spikes terminal, leafy, solitary; bracts all leaf-like; spore-caselets almost renate, pale-yellowish. Figure 130. (Passing into the following.) **L. selago.**

Long and generally pendent.

Chiefly on stems of fern-trees, robust, distantly or hardly branched; leaves rather large, firm, lanceolate-linear, mostly spreading, simply acute or rather blunt; spikes stalkless, often elongated, solitary or two or three together; bracts in four rows, either leaf-like or the upper gradually much shortened and then closely appressed; spore-caselets almost renate, pale-yellowish.

L. varium.

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TMESIPTERIS.

2133. Leaves comparatively large, placed vertically.

Chiefly on stems of fern-trees; stem branchless, from quite short to rather long, often bending downward; leaves of thin texture, nearly transparent, from obovate- to lanceolar-elliptical, flat, somewhat decurrent, without any denticulation, inequilateral, often ending in a setule; their carinular venule very distinct; segments of the fruit-supporting leaves similar to the simple leaves, but rather smaller, far extending beyond the fruit; spore-caselet formed by the concrescence of two or rarely three, fixed to the sinus of the bracteal leaves, much broader than long, somewhat indurating, soon pale-brownish, opening vertically; spores extremely minute. Figure 129.

T. Tannensis.

FILICES.

(Ferns.)

OPHIOGLOSSUM.

2134. Frond placed far above the base of the stem, but at a distance also from the spike.

Dwarf, sometimes quite minute; frond near or below the middle of the stem, firm, from lanceolate-linear to ovate, sessile, flat; spike narrow, somewhat pointed; spore-caselets from few to numerous, depressed-globular.

(O. Lusitanicum.) **O. vulgatum.**

BOTRYCHIUM.

2135. Sterile frond sessile, simply pinnate.

Here alpine, always quite dwarf; vernation folded but straight; sterile frond sessile about the middle of the stem; segments mostly flabellate-rhomboid or somewhat crescent-shaped, often bluntly denticulated in front, seldom incised or somewhat fruit-bearing; fertile frond simply or doubly pinnate, its segments unilaterally quite occupied by the almost globular spore-caselets.

B. Lunaria.

Sterile frond long-stalked, ternately and pinnately much divided.

Rather dwarf; primary divisions of the sterile frond often almost deltoid in outline, repeatedly pinnate-dissected, each short-stalked, firm throughout; fertile frond also on a long stalk, rhomboid or deltoid in contour, much pinnately divided; ultimate segments or lobes small, mostly ovate and indented; spore-caselets almost globular.

B. ternatum.

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SCHIZAEA.

2136. Stalk of the fertile fronds undivided, filiform, slightly channelled.

Vernation coiled-involute; sterile fronds simple, very narrow; stalk of the fertile frond very slender, stemlike; pinna one only, dense, short, somewhat recurved; spore-caselets in two rows, ovate-ellipsoid, their terminal ring comparatively broad, transversely furrowed.

S. fistulosa.

Stalk of the fertile fronds once, twice or oftener divided into linear rather flat segments.

Sterile frond simple or bifid or dichotomously divided into linear segments; fertile frond with a terminal dense short somewhat recurved pinna to each segment, its primary stalk elongated; spore-caselets ovate-ellipsoid, in two rows, their terminal ring comparatively broad, transversely furrowed. Figure 132.

(S. dichotoma partly.) **S. bifida.**

GLEICHENIA.

2137. Segments of the pinnas by deep division formed into pinnules 2138

Segments of the pinnas quite undivided 213

2138. Segments of the pinnules almost flat or somewhat recurved at the margin.

Often of intricate growth, rarely dwarfed; root (or root-stock) much creeping; stems scattered, slender; pinnules linear, developed additionally also along the short portions of the ramification below each pair of the main-pinnas; segments of pinnules roundish or semi-ovate or deltoid-ovate, rather firm, paler and often greyish beneath; fruit-caselets three or four, seldom more or only two, almost globular, generally pale-yellowish. Figure 136.

G. circinata.

Segments of the pinnules with only a small opening at the lower side from broad marginal recurvature.

Ascending to alpine elevations and there often dwarfed, also particularly then beset with a brownish somewhat scaly vestiture; root much creeping; stems scattered, slender;

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segments of pinnas very firm, almost orbicular or quadrate-roundish, blunt-edged from the broad and close recurvation of their margin; spore-caselets two or three or seldom more or one only, almost globular, pale-yellowish or turning light-brownish. **G. dicarpa.**

2139. Short ramification below each pair of pinnas also beset with pinnules.

In miniature somewhat of a palm-like aspect; stems scattered; fronds of rather tender texture; pinnas crowded, lanceolar in outline, their segments broad-linear, flat, all except the uppermost quite separated down to the rhachis, entire or towards the summit slightly denticulated, paler green or seldom grey beneath; spore-caselets nearly globular, often four or five, occasionally three or six, hardly contracted towards the base. **G. flabellata.**

Short ramification below each pair of pinnas bare except at the base.

Stems scattered; fronds of rather tender texture; pinnas lanceolar in outline, but generally truncate at the base, their segments semilanceolar- or broad-linear, often flat, greyish beneath, all except the uppermost separated almost down to the rhachis, never denticulated; the solitary pair of pinnas at the base of the ramifications diminutive; spore-caselets nearly globular, but conspicuously contracted towards the base, several or sometimes many, seldom few. **G. Hermanni.**

OSMUNDA.

2140. Trunk finally tall and enormously broad, always of irregular form.

Trunk at advanced age very ponderous, bearing many tufts of fronds; stalks rigid, of conspicuous length; fronds large, occasionally very long, always doubly pinnate, of very firm texture; segments of the pinnules mostly elongate- or narrow-semilanceolar and towards the summit denticulated; spore-caselets occupying the under-side of the lower segments either fully or only towards the base, closely crowded into generally somewhat elliptical and often confluent masses, dark-brown, almost globular, on very short stalklets. Figure 137. "The Square-Fern," (Todea Africana.) **O. barbara.**

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ALSOPHILA.

2141. Trunk tall, but comparatively slender.

Tree-fern, occupying forest ridges; trunk of hard texture almost throughout; frond-stalks prickly-rough, the base of the stalks of decayed fronds for a long while persistent; fronds extremely large, and particularly broad, bi- or tri-pinnate; main-rhachis usually pale-brownish; pinnules mostly elongate-semilanceolar, gradually much narrowed into the acute apex, beneath somewhat greyish, divided towards the base into usually oblique-semilanceolar segments, towards the summit into lobes of more deltoid form; divisions entire or slightly denticulated; receptacle of fruit-masses beset with minute hairlets; spore-caselets almost obovate-ellipsoid, their ring jointed, as also in all the now following ferns. Figure 138. "Slender Fern-tree."

A. australis.

CYATHEA.

2142. Trunk very slender.

Tall, sometimes very much so; frond-stalks light-colored and rough, those of decayed fronds completely seceding, leaving clear scars; fronds very large, of rather thin texture, bi- or tri-pinnate; segments of the pinnules obliquely and often narrowly semi-lanceolar or semi-elliptical, rather conspicuously denticulated or quite indented, the terminal segments confluent; fruit-masses sparse, roundish; cover very tender, surrounding only the lower portion of the fruit-masses even in their young state, without any terminal closure; ring of spore-caselets imperfect. Figure 135. **C. Cunninghami.**

DICKSONIA.

2143. Trunk tall and robust.

Tree-fern, occupying irrigated valleys; trunk externally much of soft texture, rough-fibrously coated; frond-stalks almost smooth; fronds extremely large, rigid, bi- or tri-pinnate, beneath paler green; main-rhachis often greenish; middle pinnas gradually longest; pinnules mostly elongate-semi-lanceolar in outline, their segments only about twice as long as broad or often still shorter, towards their summit sharply denticulated; outer valve of the fruit-masses rather firm, greenish, partly formed by a lobe of the segment of the pinnule, semi-globular, deeply hollowed; inner valve quite membranous, at first lid-like covering the outer; spore-caselets provided with an imperfect ring. Figure 139. "Stout Fern-tree."

(D. antarctica.) **D. Billardierii.**

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CHEILANTHES.

2144. Beset with a velvet-like often brownish vestiture.

Always dwarf; indument sometimes greyish, occasionally lanuginous; fronds imperfectly bi-pinnate, their vestiture less copious on the upper side; pinnules mostly semi-elliptical in outline, the lower deeply divided; segments or lobes blunt. **C. vellea.**

Beset with mostly scattered hairlets or narrow scalelets or almost glabrous 2145

2145. Length of fronds several times exceeding their breadth.

Always dwarf; vestiture colorless or slightly brownish; fronds imperfectly bi-pinnate, narrow in outline; lowest pinnas about as large as the others, many rather rhomboid or even somewhat deltoid in contour, only the upper pinnas closely approximated, but all sessile; pinnules or lobes blunt. Figure 143. **C. distans.**

Length of fronds from hardly to trebly exceeding their breadth.

Never tall, sometimes much dwarfed; fronds bi- or tri-pinnate, rather rigid, from almost semi-lanceolar to nearly deltoid in outline; lowest pinnas evidently larger than the others and often somewhat stalked; ultimate pinnules mostly small, from slightly to deeply lobed, often somewhat recurved at the margin and irregularly crisped, without any acute denticulation. Figure 144.
C. tenuifolia.

GRAMMITIS.

2146. Perennial, tufty, beset with brownish vestiture.

Dwarf; indument often copious, consisting of tender sometimes glandule-bearing hairlets; fronds simply pinnate, flaccid; pinnas or segments short, mostly sessile, from ovate-cuneate to almost rhomboid, often oblique, usually blunt, either few-lobed or but slightly incised or indented, the lower sometimes deeply cleft; spore-caselets stalked. Figure 152. **G. rutifolia.**

Annual, minute, pellucidly membranous, glabrous.

Very delicate, often single-stemmed; fronds simply or doubly pinnate, the basal fronds occasionally single and without any deep incisions, usually sterile; pinnas flat, mostly short-stalked, from flabellular to cuneate-rhomboid, few-lobed or anteriorily blunt, denticulated; fruit-masses often single in the direction of each principal frond-lobe; spore-caselets on very thin stalklets. **G. leptophylla.**

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POLYPODIUM.

2147. Fronds mainly beset with appressed roundish ciliolated scalelets.

Chiefly on trunks of fern-trees, dwarf; root-stock much creeping; rootlets copious; fronds scattered, stalked, of very thick texture, entire; sterile fronds often quite short, from orbicular- or rhomboid-obovate to elliptical-spatular; fertile fronds somewhat elongated, from narrow-elliptical to broad-linear; vestiture appressed, shining, greyish or brownish, occupying closely the underside of the fronds; venules concealed; fruit-masses large, occasionally oval, rather crowded or even merging into each other. **P. serpens.**

Fronds glabrous or mainly beset with short spreading hairlets 2148

2148. Fronds all entire.

Chiefly on trunks of fern-trees, dwarf, sometimes quite minute; fronds tufted, short-stalked, firm, exceptionally somewhat bisected, from narrowly lanceolar-elliptical to broad-linear, gradually attenuated towards the base; venules all diverging; fruit-masses large, from oval- to linear-elliptical, biseriate. **P. Australe.**

Fronds all or mostly divided 2149

2149. Fronds quite small.

Chiefly on the trunks of fern-trees, tufted; fronds firm, mostly simply pinnatisected, seldom any undivided, much decurrent at their stalk-like base, the segments from narrow-semilanceolar to broad-linear, almost serrate; longest towards the middle of the frond; venules all diverging;' fruit-masses from oval to orbicular.
P. grammitidis.

Fronds comparatively or quite large 2150

2150. Fronds of firm texture.

Chiefly on stems and branches of trees and also on trunks of arborescent ferns; root-stock widely creeping, with numerous rootlets; fronds pinnatifid or some undivided, slightly flexuous, very shining, their lobes often semi-lanceolar and generally few only, sometimes long, rarely again divided; venulation rather prominent, reticular; fruit-masses orbicular, comparatively large, distant, biseriate, their receptacles protruding on the surface of the frond. Figure 151. **P. pustulatum.**

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Fronds of membranous texture 2151

2151. Fronds simply pinnatilobed or some entire.

Perceptibly fragrant, chiefly on stems and branches of trees, also on trunks of arborescent ferns; root-stock widely creeping; fronds much decurrent along the stalk, their lobes often semi-lanceolar and generally few only, seldom much elongated; venulation hardly prominent, reticular; fruit-masses orbicular, distant, biseriate.

P. scandens.

Fronds repeatedly pinnate.

Tall; root-stock creeping; fronds very long and also of ample breadth, mostly tri-pinnate, much beset with short often glandule-bearing hairlets, usually rather membranous, but occasionally also somewhat rigid, broadest towards the base; stalk somewhat rough; ultimate pinnules almost semi-elliptical, from deeply to slightly but always bluntly lobed, often reflexed at the margin; fruit-masses rather small, often approaching towards the middle of the pinnule, though singly near a sinus, occasionally somewhat concealed under a recurved lobule, sometimes almost confluent; spore-caselets on conspicuous stalklets.

P. punctatum.

HYPOLEPIS.

2152. Fruit-masses placed basally each into a sinus of the ultimate frond-lobes.

Tall; root-stock creeping; frond long and of ample breadth, mostly rather flaccid, tri-pinnate, somewhat beset with very short hairlets; ultimate pinnules or segments almost semi-lanceolar, from deeply to slightly lobed; fruit-masses strictly marginal, never reaching towards the middle of the pinnule; fruit-cover somewhat renate, only at and towards its upper margin membranous; spore-caselets on conspicuous stalklets. **H. tenuifolia.**

DAVALLIA.

2153. Length of the fruit-cover much greater than its breadth.

Hardly tall; root-stock far-creeping; frond very firm, generally somewhat deltoid in outline, glabrous, bi- or tri-pinnate; pinnules or segments indented or pinnatifid, gradually much narrowed upwards, the ultimate lobes often excised at the upper end; cover of fruit-masses longitudinally adnate, thus only terminally open, hemi-ellipsoid, denticularly overreached by their pertaining lobes; spore-caselets on conspicuous stalklets.

D. pyxidata.

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Length and breadth of the fruit-cover about the same 2154

2154. Fronds firm, almost rigid.

Tall, chiefly on outskirts of forests or riparian; fronds large, pale-green or even of a slightly yellowish green, generally thrice pinnate, somewhat beset with very short hairlets; pinnules upwards gradually much narrowed; segments almost semi-lanceolar, deeply lobed towards their base; cover of fruit-masses very small, also laterally open, sometimes partly concealed by recurvation of the nearest lobule of the frond; spore caselets on conspicuous stalklets. Figure 140. (Dicksonia dubia.) **D. dubia.**

Fronds tender, flaccidly membranous.

Tall, restricted to umbrageous irrigated forest-valleys; root-stock creeping; fronds large, dark-green, repeatedly pinnate, slightly beset with hairlets; pinnules elongate-semilanceolar in outline, much narrowed into the apex, their segments somewhat elliptical- or rhomboid-ovate, deeply incised, rather oblique, most of the lobules slightly indented, the lowest of the anterior lobules protracted; fruit-covers very small, nearly hemispherical, almost exserted; spore-caselets very minute, provided with stalklets. (Dicksonia davallioides.) **D. dicksonioides.**

ADIANTUM.

2155. Densely beset with short hairlets.

Dwarf, tufted; vestiture slightly rough; stalks and rhaches very dark and shining; fronds consisting of but few pinnas, these dark-green, almost fascicularly crowded, all verging upwards and short-stalked, very narrow in outline, the outer the smallest; segments small, often numerous, nearly sessile, rather rigid, finely streaked, mostly semiorbicular-rhomboid, somewhat dimidiated, bluntly denticulated along the upper margin; fruit-masses in close approach to each other; fruit-cover orbicular-renate, externally prominent. **A. hispidulum.**

Glabrous or scantily beset with bristlets 2156

2156. Frond-segments roundish-rhomboid, on conspicuous stalklets.

Rather dwarf; fronds repeatedly pinnate; stalk and rhaches very dark and shining; segments thin, light-green, rather irregularly dispersed, nearly always few only on the ultimate pinnas, in front often slightly incised, at the base truncate or somewhat cuneate; fruit-cover circular-renate, retracted. Figure 142. "Maidenhair-Fern." **A. Aethiopicum.**

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Frond-segments dimidiate-rhomboid, almost sessile ... 2157

2157. Cover of fruit-masses elliptic-renate, placed on the denticles, thus almost exserted.

Tall; fronds quite large, repeatedly pinnate, almost deltoid in outline; stalk and rhaches very dark and shining, somewhat rough; rhaches of the ultimate pinnules beset with minute hairlets; segments thin, numerous, alternating, regularly bi-seriated, slightly indented along the upper margin; venulation close, dichotomous.

A. formosum.

Cover of fruit-masses broad-renate, placed between the denticles, thus almost retracted.

Dwarf; very scantily beset with bristlets, otherwise glabrous; stalk and rhaches very dark and shining; fronds generally consisting of few crowded pinnas only; segments very thin, closely alternating, usually blunt, regularly biseriated, in front shortly indented; fruit-covers overtopped by the denticles of the segments. **A. diaphanum.**

LINDSAYA.

2158. Fronds very narrow in outline, simply pinnate.

Dwarf; root-stock creeping; rootlets rather copious; stalks very thin, as well as the rhaches dark and shining; some of the fronds sterile; segments quite small, mostly opposite, sessile, from cuneate to rhomboid and flabellular, often inequilateral; fruit-cover narrow, extending along the terminal margin of the frond-segments; spore-caselets on conspicuous stalklets. Figure 141. **L. linearis.**

PTERIS.

2159. Fronds simply pinnate or imperfectly bipinnate ... 2160

Fronds repeatedly pinnate 2162

2160. Frond-segments decurrent and adnate at the base.

Tall; fronds rather membranous, dark-green, often bi-pinnate in its lower portion; segments very long, from linear- to narrow-lanceolar, mostly opposite, very acute, the upper half of each narrowed at the base quite to the carinular line, minutely serrulated towards the summit; lateral venules almost parallel-spreading; spore-caselets placed on a filiform-linear axis. **P. umbrosa.**

Fronds segments truncate and free at the base ... 2161

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2161. Frond-segments flaccid, hardly paler beneath.

Seldom quite tall, occasionally dwarfed; fronds almost lanceolar in outline, simply pinnate; segments sessile, from a broad base mostly linear-lanceolar, rather acute, their base sometimes rather rounded or even slightly bi-lobed, the terminal segment much elongated; lateral venules very divergent, almost parallel; spore-caselets placed on a filiform-linear axis. **P. longifolia.**

Frond-segments firm, much paler beneath.

Rather dwarf; fronds almost lanceolar in outline, simply pinnate; rhachis as well as the stalk dark-colored and beset with rigid hairlets or narrow scalelets; segments sessile, nearly semi-lanceolar, often entire and slightly curved upwards, exceptionally at the base bluntly bi-lobed and also throughout more dilated, always beneath greyish-green and without any lustre; venules concealed; fruit-cover very narrow; spore-caselets occupying a broad-linear space intra-marginally, arising from the upper portion of venules. (Pellaea falcata.) Figure 145. **P. falcata.**

2162. Fronds rigid.

Often very tall; root-stock far-creeping; fronds ample, broadest towards the base; segments rather distant and unequal, mostly broad-linear and blunt, somewhat decurrent, the terminal segment more elongated, some of the lateral segments much abbreviated, all rather convex and transversely impressed-streaked above, at the margin recurved, beneath often beset with hairlets; spore-caselets placed on a filiform-linear axis. "Brake-fern." **P. aquilina.**

Fronds flaccid **2163**

2163. Segments of pinnules narrow-lobed.

Rather tall, glabrous; fronds ample; rhaches as well as the stalk rather pale and slight-yellowish, but occasionally dark-brown, smooth; segments rather approximated, from lanceolar- to broad-linear, blunt, confluent at the base, serrulated towards the summit, the terminal segment somewhat elongated; venules diverging; spore-caselets placed on a filiform-linear axis. **P. arguta.**

Segments of pinnules broad-lobed **2164**

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2164. Fronds much paler beneath.

Tall, glabrous; root-stock widely creeping; stemlike stalks scattered; fronds very ample, pale- or greyish-green, without any lustre; segments mostly semi-elliptical, without any denticulation, confluent at the base, the uppermost segments gradually passing into the attenuated short-lobed end of the pinnule; venules scarcely or imperfectly reticulating; spore-caselets placed on a filiform-linear axis. **P. incisa.**

Fronds hardly paler beneath.

Tall, sometimes slightly beset with minute hairlets; fronds very ample, dark-green; upper pinnules somewhat decurrent; segments from semi-elliptical to semi-lanceolar, confluent at the base, often denticulated at the summit; venules completely reticulating; spore-caselets placed on a filiform-linear axis. **P. comans.**

LOMARIA.

2165. Fronds all or some undivided.

Seldom tall; frond-stalks short; sterile fronds or their segments narrowly elongated-lanceolar, rigid, shining, dark-green, entire or slightly denticulated, pointed at the summit; fertile fronds or their segments broad-linear, also rigid, rather acute; segments of neither kind of frond numerous. **L. Patersoni.**

2166. Fronds rather flaccid 2167

Fronds rather firm or quite rigid 2168

2167. Fronds extensively pinnate.

Often rather dwarf, scantily beset with pointed narrow scalelets; fronds rather narrow in proportion to their length, short-stalked, hardly paler beneath, pinnate in their lower portion, pinnatisected in the upper; segments of the sterile fronds membranous, from almost oval to elliptical, the lowest segments gradually much abbreviated; segments of the fertile fronds mostly linear-elliptical. **L. fluviatilis.**

Fronds pinnatisected throughout.

Rather dwarf, glabrous, sometimes forming a very short trunk; fronds lanceolar in outline, somewhat membranous, hardly paler beneath; segments of the sterile fronds mostly semi-lanceolar, adnate at the base, rather pointed, hardly denticulated, conspicuously venular-streaked, the lowest shortened to a roundish or even semi-orbicular form; segments of the fertile fronds broad-linear. **L. lanceolata.**

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2168. Dwarf.

Alpine, glabrous; rootstock creeping; fronds small, few in each tuft; sterile fronds rather short-stalked; fertile fronds long-stalked, the segments of either almost semi-elliptical or the fruit-bearing somewhat narrower; fruit-cover comparatively broad. Figure 146. **L. alpina.**

Tall 2169

2169. Fronds very much paler underneath.

Rather tall, sometimes forming a short trunk; fronds large, on conspicuous blackish stalks, lanceolar in outline, glabrous, placed circularly, exceptionally bi-pinnatisected; rhachis dark-colored; segments of the sterile fronds narrowly semi-lanceolar, entire, adnate at the base and mostly somewhat confluent; venules subtile; segments of the fertile fronds lanceolate- or broad-linear; spores dark-brown or almost blackish. **L. discolor.**

Fronds slightly paler underneath.

Often very tall, sometimes forming a very short trunk; fronds conspicuously stalked, somewhat semi-lanceolar in outline, scantly beset with narrow pointed scalelets; segments of the sterile fronds often much elongated, from almost elliptical to narrowly semi-lanceolar, shining, nearly or quite sessile, free at the base and there truncate or slightly bi-lobed, lowest segments seldom much abbreviated, all prominently and closely venular-streaked, minutely serrulated; segments of the fertile fronds rather long, broad-linear. **L. Capensis.**

BLECHNUM.

2170. Fronds pinnatisected, the bases of the segments mostly confluent.

Often on outskirts of forest; fronds rather firm, light-green, somewhat lanceolar in outline; segments numerous, narrow- and elongate-semilanceolar, quite flat, with broad base adnate except the lowest, transversely venular-streaked, very minutely serrulated; spore-caselets on conspicuous stalklets. Figure 147.

B. cartilagineum.

WOODWARDIA.

2171. Fronds throughout pinnatisected.

Tufted, rather rigid, sometimes forming a short trunk; fronds lanceolar in outline, their stalk as well as the rhachis rough; segments firm, sharply denticulated, the

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middle elliptic-semilanceolar, all adnate at the base or exceptionally the lowest free beyond the point of attachment; fruit-cover very small, somewhat curved.
(Doodia aspera.) **W. aspera.**

Fronds pinnate in their lower portion.

Tufted, never tall, occasionally somewhat prostrate; fronds often narrow-lanceolar in outline, pinnatisected in their upper portion, much protracted and undivided at the summit; their stalk and rhachis dark-colored, hardly rough; segments minutely denticulated, the middle narrowly elliptic-semilanceolar, the lower free at the base, exceptionally some three-lobed; fruit-covers conspicuous, but never long, slightly curved. Figure 148.
(Doodia caudata.) **W. caudata.**

ASPLENIUM.

2172. Fronds undivided.

Tufted; fronds very large and firm, somewhat circularly arranged, almost sessile, from elliptic- to broad-lanceolar, pointed, shining, quite entire, glabrous, the keel mostly black; the lateral venules in close approach to each other, parallel, the peripheric venule almost contiguous to the margin of the frond; fruit-masses very long, but narrow, closely parallel, opening upwards, approaching the median line of the frond, but remaining distant from its margin; spore-caselets on conspicuous stalklets. "Birdsnest-Fern." **A. Nidus.**

Fronds divided 2173

2173. Fronds doubly or repeatedly pinnate 2174

Fronds simply pinnate 2178

2174. Frond-segments streaked by prominent venules.

Tufted, rigid; fronds on rather long stalks, firm, bi-pinnate when well developed, almost semi-lanceolar in outline; pinnas nearly all opposite, much pointed at the summit; segments sessile, from rhomboid- to linear-cuneate, irregularly incised, partly confluent, acutely denticulated in front, considerably paler beneath and there often beset with hairlets; venules dichotomously longitudinal, the carinular venule hardly more prominent than the others; spore-caselets provided with stalklets. **A. furcatum.**

Frond-segments traversed by subtile venules ... 2175

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2175. Cover of fruit-masses tumid.

Tall, finally developing a real though never tall trunk; fronds long-stalked, flaccid, sometimes very large, repeatedly pinnate, somewhat deltoid in outline; segments almost ovate-semilanceolar, the upper confluent, slightly or distinctly denticulated, occasionally incised; fruit-masses rather short; fruit-cover almost ellipsoid, at first closed by its margin meeting from each side contiguously beneath, soon anteriorely but often irregularly dehiscent.
A. umbrosum.

Cover of fruit-masses depressed 2176

2176. Comparatively dwarf.

Sub-alpine, tufted; fronds small, on slender stalks, firm, bi-pinnate when well developed; segments often somewhat scattered, from roundish- to ovate-rhomboid or occasionally cuneate, oblique, mostly very narrowed at the base, incised or indented in front; fruit-masses seldom more than three to any of the segments. **A. Hookerianum.**

Comparatively tall 2177

2177. Fruit-masses almost marginal.

Often on trunks of fern-trees, somewhat pendent; fronds of very thick texture, even sometimes almost carnulent, often only imperfectly bi-pinnate; pinnules elongated, much narrowed upwards; lobes of segments from lanceolate-linear to semi-lanceolar, the lower slightly distant, the upper confluent; fruit-masses broadish; spore-caselets on conspicuous stalklets. **A. flaccidum.**

Fruit-masses quite dorsal.

Somewhat beset with pointed narrow scalelets; fronds rather flaccid, bi-pinnate, often generating proliferously some young plants from near the summit; pinnas mostly alternate, almost semi-lanceolar in outline, pointed; segments from rhomboid- to elliptic-ovate, somewhat decurrent, indented; fruit-masses rather broadish.
A. bulbiferum.

2178. Segments of fronds quite long.

Usually also here a coast-fern, robust but never tall, occasionally quite dwarfed; fronds conspicuously stalked, of very thick texture, almost lanceolar in outline; segments elliptic- or lanceolar-ovate, slightly acute or oftener blunt, rather obtusely denticulated, seldom somewhat incised, very narrowed only at the base, occasionally reduced to very few; fruit-masses comparatively large and often especially long. **A. marinum.**

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Segments of fronds quite short 2179

2179. Flaccid, the frond-segments membranous.

Small and weak, mostly prostrate, at least the lower portion; fronds very narrow; rhachis filiform-elongated towards the summit, there much beyond the segments bare and often very flexuous; segments short, from roundish- to semiorbicular-rhomboid, usually in rather distant pairs or some scattered, always denticulated in front, seldom deeply lobed; fruit-masses few or several to any of the segments. Figure 149. **A. flabellifolium.**

Rigid, the frond-segments firm.

Tufted; fronds very narrow, their rhachis very slender, blackish and shining as well as the stem; segments usually from elliptic- to orbicular-ovate, bluntly denticulated, mostly opposite, always sessile, occasionally minute; fruit-masses rather crowded. **A. Trichomanes.**

ASPIDIUM.

2180. Fronds simply pinnate.

Tall, beset with short soft hairlets; fronds long-stalked, membranous, broad-lanceolar in outline; segments elongate-semilanceolar, often almost pinnatifid, nearly truncate at the base, much narrowed at the summit, the lobes blunt and entire; fruit-masses generally biseriate from any of the lobes to the carinular line of the segments; fruit-cover renate. **A. molle.**

Fronds doubly or repeatedly pinnate 2181

2181. Fronds often doubly pinnate.

Tall, particularly very much so in subalpine regions; fronds circularly crowded, almost lanceolar in outline, quite rigid, rather often proliferous at the summit, their stem and rhachis generally much beset with shining pointed narrow often dark-brown scalelets; pinnas almost semi-lanceolar in contour, very acute; segments generally small, from rhomboid- to ovate-lanceolar, somewhat oblique, irregularly and often deeply and always sharply serrated; fruit-cover orbicular, occasionally quite undeveloped. **A. aculeatum.**

Fronds often repeatedly pinnate 2182

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2182. Somewhat beset with bristlets.

Rather dwarf; root-stock creeping; rootlets copious; frond-stalks scattered; fronds almost deltoid in outline, firm; bristlets much dispersed, spreading, developed particularly on the frond-stalk and rhachis, often black; pinnas nearly semi-lanceolar or the lowest more deltoid, all much pointed; segments from elliptic- to linear-lanceolar, sharply serrated or partly incised; fruit-cover almost orbicular. **A. hispidum.**

Glabrous or beset with soft hairlets 2183

2183. Fronds of thick texture.

Chiefly on trunks of fern-trees, usually rather tall, but occasionally dwarfed; root-stock creeping, much elongated; frond-stalks scattered; fronds almost deltoid in outline, sometimes only bi-pinnate, their stalks rough, scalelets occurring mainly on the stalk and rhachis; segments comparatively large, mostly elliptic-lanceolar, bluntly denticulated; fruit-cover orbicular, rather large, early seceding; spores generally dark-colored. Figure 150. **A. Capense.**

Fronds of thin texture 2184

2184. Fruit-masses distant from the margin of the frond-segments.

Tall; root-stock creeping, rather abbreviated; fronds long-stalked, somewhat firm, dark-green on both sides, nearly glabrous, rather shining, often almost deltoid in outline, sometimes only bi-pinnate; segments somewhat decurrent, rather semi-lanceolar or slightly rhomboid, the upper confluent, all irregularly and sharply denticulated or to some extent incised; divisions of venules generally few; fruit-cover quite small, orbicular-renate, frequently undeveloped. **A. decompositum.**

Fruit-masses near the margin of the frond-segments.

Root-stock creeping, much elongated; fronds large, long-stalked, almost membranous, much beset with subtile hairlets; the lower pinnas the longest; segments rather acutely denticulated and partly incised; divisions of venules generally several; fruit-cover quite small orbicular-renate. **A. tenerum.**

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HYMENOPHYLLUM.

2185. Frond-segments minutely denticulated.

Always very dwarf, here often on the trunks of fern-trees; root-stock extremely thin, creeping; stalks thinly filiform throughout; fronds almost completely pinnate, shining; segments partly decurrent, deeply divided into elliptic- or broad-linear blunt lobes, the denticles very acute, rather unequal; fruit-masses mostly axillary, towards their base innate, the two segments of the fruit-cover orbicular-obovate, denticulated. **H. Tunbridgense.**

Frond-segments without any denticulation 2186

2186. Stalk filiform throughout.

Dwarf, often on the trunks of fern-trees; root-stock creeping, thinly filiform; stems capillaceous; fronds from deltoid to lanceolar-rhomboid in outline, usually quite small, but occasionally rather elongated, simply or doubly pinnate but imperfectly so, shining and bright-green on both sides; pinnas somewhat decurrent; lobes of the segments from elliptic- to broad-linear, blunt, partly confluent; segments of fruit-covers nearly orbicular. Figure 134.

H. nitens.

Stalk upwards membranously dilated.

Dwarf, often on trunks of fern-trees; root-stock creeping, thinly filiform; fronds somewhat deltoid in outline, imperfectly bi- or even tri-pinnate when well-developed, occasionally more elongated, often crisped; lobes of the segments somewhat decurrent, from elliptic- to broadish-linear, mostly short, blunt; fruit-masses generally terminal; segments of the fruit-covers nearly orbicular.

H. Javanicum.

TRICHOMANES.

2187. Fronds imperfectly pinnate.

Quite dwarf, chiefly on trunks of fern-trees, sometimes forming large patches; fronds on almost capillary stalks, conspicuously and closely venular-streaked, very shining; lower segments from broad-linear to narrow-elliptical, entire or indented or incised, but without distinct denticulation, almost or quite sessile on the thus far very thin rhachis; upper segments confluent, the terminal one elongated; fruit-masses axillary; tube of the fruit-cover much innate, dilated at the summit; setular axis of the fruit-masses long-exserted. Figure 133.

T. venosum.

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Fronds doubly pinnatifid.

Very dwarf, chiefly on trunks of fern-trees, ; fronds on extremely thin stalks, their segments broadish-linear, entire or bilobed, narrowly decurrent, with only one venule, without any denticulations; fruit-masses axillary; fruit-cover almost emersed, quite narrowed at the base, dilated at the summit; setular axis of the fruit-masses conspicuously exserted. **T. humile.**

PLANTS QUITE RECENTLY DISCOVERED IN VICTORIA.

1157*b*. Flowers very small, corymbously much crowded.

Leaves very short, mostly opposite, from linear- to ellipsoid-trigonous; flowers almost capitularly approximated; tube of the calyx five-furrowed, but without any transverse rugulosity; the lobes blunt, minute, yet still slightly longer than the petals; style short, towards the summit beset with minute papillular hairlets.

Darwinia micropetala.

1595*b*. Lobes of the corolla nearly equal, somewhat longer than its tube, gradually pointed.

Shrub, seldom tall, much beset with radiating hairlets; leaves usually short, from almost ovate to narrowly lanceolar-elliptical, often recurved at the margin, nearly or quite sessile; flowers fragrant, mostly solitary in the upper leaf-axils, on very short stalklets; calyx quite small, its lobes rather acute; corolla moderately large, whitish, its tube dark-streaked, its lobes comparatively narrow; stamens enclosed; anthers by confluence of their two cells almost unilocular; fruit small, almost globular; seeds few, renate-ellipsoid.

Anthocercis albicans.

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426*b*. Flowers with an equally five-lobed corolla, five stamens and a four-celled ovulary.

Shrubs, seldom tall; leaves simply opposite; flowers always small; stamens equal; style undivided; fruit dry, inseparable into fruitlets. **Newcastlia.** 1732*b*

1732*b*. Leaves from rhomboid- to cordate-ovate.

Hardly shrubby, much beset with a dense whitish vestiture; leaves flaccid, sessile; lobes of the calyx narrow-semi-lanceolar, considerably longer than its tube; corolla about thrice as long as the calyx, cleft to near the middle, its lobes rather narrow, well pointed; stamens hardly half as long as the corolla-tube; style short. **N. Dixoni.**

1776*b*. Calyx-lobes and petals yellow, with brownish or purplish spots.

From rather dwarf to somewhat tall; leaf from ovate- to narrow-lanceolar, glabrous as well as its stalk; flowers on short stalklets, from two to few; lateral lobes at the summit of the gynostemium connivent, fringed, the middle lobe pressed back, somewhat clavate, entire; anther attenuated into a conspicuous apex.
Thelymitra fusco-lutea.

1840*b*. Leaves long, very straight, strong, quite filiform, pointed.

Robust, erect, rather tall; stems very short, undivided; leaves all basal, quite terete or slightly compressed, finely streaked, their apex pungent; flower-clusters rather large, globular, one or two or seldom more and then superposed; bracts short-fringed; petals comparatively large, upwards whitish; fruit obovate-globular, short-pointed; seeds three, almost spherical, pale-brownish outside.
Xerotes juncea.

1890*b*. Fruit-stalks very long.

Stems thinly filiform, branched; leaves of extreme narrowness, but on broadish clasping descending stalks, slightly rough at the edges; floral leaves diminutive, bract-like; fruit-stalk capillary; fruitlets minute, slightly keeled, their base constrictedly narrowed.
(Lepilaena Australis.) **Althenia Australis.**

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564*b*. **Spore-caselets comparatively small, three-celled.**

Leaves quite minute, distantly scattered; spore-caselets irregularly remote from each other. **Psilotum.** 2133*b*

2133*b*. **Branches dichotomously numerous, slender and triangular.**

Usually dwarf, but occasionally rather elongated; leaves narrow and acute; bracts very small, bisected, their segments linear and pointed; spore-caselets firm, pale-yellowish, trigonous-globular, rather depressed, dehiscent to the base into three valves, each of them inside with a prominence along the middle. **P. triquetrum.**

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PLANTS, FOUND IN VICTORIA, SINCE THE ENUMERATION IN PART II. (PAGES 5–60) WAS PUBLISHED, INCLUSIVE OF A FEW SPECIES, THEN MISSED FOR RECORDING.

Cabomba peltata, F. v. M. ...	...	—	—	—	N.E.	—
Hibbertia monogyna, R. Brown	...	—	—	—	—	E.
Eriostemon capitatus, F. v. M. ...	...	N.W.	—	—	—	—
Sida intricata, F. v. M. ...	...	N.W.	—	—	—	—
Dodonaea lobulata, F. v. M. ...	...	N.W.	—	—	—	—
Phyllanthus thesioides, Bentham	...	N.W.	—	—	—	—
Casuarina paludosa, Sieber ...	...	—	—	—	—	E.
Kochia microphylla, F. v. M. ...	...	N.W.	—	—	—	—
Muehlenbeckia gracillima, Meissner	...	—	—	—	—	E.
Oxylobium trilobum, F. v. M. ...	...	—	—	—	—	E.
Jacksonia Clarkei, F. v. M. ...	...	—	—	—	N.E.	—
Zornia diphylla. Persoon ...	...	—	—	—	—	E.
Desmodium brachypodum, Asa Gray	...	—	—	—	—	E.
Acacia mollissima, Willdenow ...	...	—	S.W.	S.	N.E.	E.
Darwinia micropetala, Bentham	...	N.W.	—	—	—	—
Kunzea parvifolia, Schauer ...	...	—	S.W.	—	N.E.	—
Kunzea capitata, Reichenbach ...	...	—	—	—	—	E.
Callistemon linearis, De Candolle	...	—	—	—	—	E.
Backhousia myrtifolia, Hooker ...	...	—	—	—	—	E.
Haloragis Baeuerleni, F. v. M. ...	...	—	—	—	—	E.
Sium erectum, Hudson ...	...	—	S.W.	—	—	—
Xanthosia Atkinsoniana, F. v. M.	...	—	—	—	—	E.
Notothixos subaureus, Oliver ...	...	—	—	—	—	E.
Persoonia revoluta, Sieber ...	...	—	—	—	—	E.
Hakea saligna, Knight ...	...	—	—	—	—	E.
Hakea Macreana, F. v. M. ...	...	—	—	—	—	E.
Pimelea hypericina, Cunningham	...	—	S.W.	S.	—	E.
Opercularia hispida, Sprengel ...	...	—	—	—	—	E.
Aster dentatus, Andrews ...	...	—	—	—	—	E.
Aster lepidophyllus, Persoon ...	...	N.W.	S.W.	S.	N.E.	E.

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Podolepis rhytidochlamys, F. v. M.	N.W.	—	—	—	—
Helichrysum adenophorum, F. v. M.	—	S.W.	—	—	—
Ammobium alatum, R. Brown	—	—	—	—	E.
Angianthus tenellus, Bentham	N.W.	—	—	—	—
Angianthus pleuropappus, Bentham	N.W.	—	—	—	—
Glossogyne tenuifolia, Cassini	—	—	—	—	E.
Goodenia pusilliflora, F. v. M.	N.W.	—	—	—	—
Gentiana quadrifaria, Blume	—	—	—	—	E.
Anthocercis albicans, Cunningham	—	—	—	N.E.	—
Glossostigma Drummondi, Bentham	N.W.	—	—	—	—
Prostanthera saxicola, R. Brown	—	—	—	—	E.
Newcastlia Dicksoni, F. v. M. and Tate	N.W.	—	—	—	—
Styphelia microphylla, Sprengel	—	—	—	—	E.
Styphelia esquamata, Sprengel	—	—	—	—	E.
Styphelia costata, F. v. M.	N.W.	S.W.	—	—	—
Styphelia appressa, Sprengel	—	—	—	—	E.
Styphelia attenuata, F. v. M.	—	—	—	—	E.
Epacris crassifolia, R. Brown	—	—	—	—	E.
Diuris alba, R. Brown	—	—	—	N.E.	—
Thelymitra epipactoides, F. v. M.	—	—	S.	—	—
Thelymitra fusco-lutea, R. Brown	—	S.W.	—	—	—
Pterostylis pedaloglossa, Fitzgerald	—	—	S.	—	—
Dianella coerulea, Sims	—	—	—	—	E.
Tricoryne simplex, R. Brown	—	—	—	—	E.
Xerotes juncea, F. v. M.	N.W.	—	—	—	—
Philhydrum lanuginosum, Banks	—	S.W.	—	—	—
Potamogeton lucens, Linné	—	S.W.	—	—	—
Althenia australis, F. v. M.	N.W.	—	—	—	—
Fimbristylis ferruginea, Vahl	—	—	—	—	E.
Schoenus ericetorum, R. Brown	—	—	—	—	E.
Andropogon affinis, R. Brown	N.W.	—	—	—	—
Psilotum triquetrum, Swartz	—	S.W.	—	—	—
Adiantum diaphanum, Blume	—	—	S.	—	E.
Hypolepis tenuifolia, Bernhardi	—	—	—	—	E.
Aspidium tenerum, Sprengel	—	—	—	—	E.

The recording of new data for regional distribution of numerous of the formerly enumerated species is reserved for a future occasion.

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PLANTS, HITHERTO IMMIGRATED AND NATURALIZED IN VICTORIA, WITH INDICATIONS OF THEIR NATIVITY AND ENGLISH POPULAR NAMES.

(E. = Europe; As. = Asia; Afr. = Africa; Am. = America).

		Ranunculaceae.				
Ranunculus muricatus, Linné			E.	As.	Afr.	—
		Papaveraceae.				
Papaver hybridum, Linné	...	Wild Poppy	E.	As.	Afr.	—
Papaver Rhoeas, L'Obel...	...	...	E.	As.	Afr.	—
Argemone Mexicana, Linné	...	Prickly Poppy	—	—	—	Am.
		Fumariaceae.				
Fumaria officinalis, Linné	...	Fumitory	E.	As.	Afr.	—
		Cruciferae.				
Nasturtium aquaticum, Bock	...	Water-Cress	E.	As.	Afr.	—
Sisymbrium officinale, Scopoli	...	Hedge-Mustard	E.	As.	Afr.	—
Brassica oleracea, Linné ...	..	...	E.	As.	Afr.	—
Brassica Sinapis, Visiani	...	Charlock	E.	As.	Afr.	—
Senebiera Coronopus, Poiret	...	..	E.	As.	Afr.	—
Senebiera didyma, Persoon	...	...	—	—	—	Am.
Capsella Bursa pastoris, Moench	...	Shepherd's Purse	E.	As.	Afr.	—
Lepidium Draba, Linné ...	...	...	E.	As.	Afr.	—
Raphanus Rhaphanistrum, Linné...		Wild Radish	E.	As.	Afr.	—
		Geraniaceae.				
Erodium cicutarium, l'Héritier	...	Storksbill	E.	As.	Afr.	—
Erodium moschatum, l'Héritier	...	... ...	E.	As.	Afr.	—
		Malvaceae.				
Modiola multifida, Moench	...	...	—	—	—	Am.
Malva rotundifolia, Linné	...	Dwarf Mallow	E.	As.	Afr.	—
Malva silvestris, Linné ...	..	Tall Mallow	E.	As.	Afr.	—

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Euphorbiaceae.

Ricinus communis, Linné	...	Castoroil-plant	...	—	As.	Afr.	—
Euphorbia Peplus, Linné	...	Spurge	...	E.	As.	Afr.	—
Euphorbia helioscopia, Linné	...	...	...	E.	As.	Afr.	—

Urticaceae.

Urtica urens, Ray ...	...	Dwarf Nettle	...	E.	As.	Afr.	—
Urtica dioica, Linné ...	...	Tall Nettle	...	E.	As.	Afr.	—

Phytolaccaceae.

Phytolacca Americana, Linné	...	...	...	—	—	—	Am.

Ficoideae.

Mesembrianthemum crystallinum, Linné	...	Ice-plant	...	E.	As.	Afr.	—

Caryophylleae.

Lychnis Githago, Lamarck	...	Corn-cockle	...	E.	As.	Afr.	—
Silene Cucubalus, Wibel	...	...	...	E.	As.	Afr.	—
Silene Gallica, Linné ...	...	...	...	E.	As.	Afr.	—
Spergula arvensis, Linné	...	Spurrey	...	E.	As.	Afr.	—
Spergula pentandra, Linné	...	...	...	E.	As.	Afr.	—
Stellaria media, Villars ...	...	Chickweed	...	E.	As.	Afr.	—
Arenaria serpillifolia, Linné	...	...	...	E.	As.	Afr.	—

Salsolaceae.

Chenopodium album, Linné	...	Goosefoot	...	E.	As.	—	—
Chenopodium murale, Linné	...	...	...	E.	As.	—	—
Chenopodium glaucum, Linné	...	...	...	E.	As.	—	—
Chenopodium ambrosioides, Linné		...	...	—	—	—	Am.
Atriplex patulum, Linné		Wild Orache	...	E.	As.	Afr.	Am.

Amarantaceae.

Amarantus albus, Linné ...	...	...	...	—	—	—	Am.

Polygonaceae.

Rumex crispus, Linné ...	...	Dock ...	...	E.	As.	Afr.	—
Rumex conglomeratus, Murray	...	,, ...	...	E.	As.	Afr.	—
Rumex Acetosella, Linné	...	Sorrel-Weed	...	E.	As.	Afr.	—
Polygonum aviculare, Linné	...	Knot-Weed	...	E.	As.	Afr.	—

Leguminosae.

Genista Canariensis, Linné	...	...	...	E.	—	Afr.	—
Ulex Europaeus, Linné ...	...	Furze ...	...	E.	—	Afr.	—
Medicago sativa, Linné ...	...	Lucerne	...	E.	As.	Afr.	—
Medicago lupulina, Linné	...	Black Medick	...	E.	As.	Afr.	—

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Medicago denticulata, Willdenow	Burr-Clover	...	E.	As.	Afr.	—
Melilotus parviflora, Desrousseaux	...	...	E.	As.	Afr.	—
Trifolium arvense, Linné ...	Hare's Clover	...	E.	As.	Afr.	—
Trifolium pratense, Bock ...	Red Clover	...	E.	As.	Afr.	—
Trifolium repens, Rivinus ...	White Clover	...	E.	As.	Afr.	Am.
Trifolium agrarium, Dodoens ...	Hop-Clover	...	E.	As.	Afr.	—
Trifolium procumbens, Linné ...	...	...	E.	As.	Afr.	—
Trifolium resupinatum, Linné ...	...	...	E.	As.	Afr.	—
Trifolium subterraneum, Linné ...	...	...	E.	As.	Afr.	—
Trifolium tomentosum, Linné ...	...	...	E.	As.	Afr.	—
Lotus tetragonolobus, Linné ...	...	...	E.	As.	Afr.	—
Vicia sativa, Linné	Vetch ...	...	E.	As.	Afr.	—
Vicia angustifolia, Roth	Wild Vetch	...	E.	As.	Afr.	—
Vicia hirsuta, Koch	Lentil-Tare ...	...	E.	As.	Afr.	—
Vicia tetrasperma, Moench ...	..	...	E.	As.	Afr.	—
Albizzia lophantha, Bentham ...	W. Austral. Wattle	—	—	—	—

Rosaceae.

Rosa rubiginosa, Linné	Sweet Briar	...	E.	As.	Afr.	—
Sanguisorba minor, Scopoli ...	Salad-Burnet	...	E.	As.	Afr.	—
Sanguisorba polygama, F. v. M. ...	...	...	E.	As.	—	—
Alchemilla arvensis, Scopoli ...	...	...	E.	As.	Afr.	—

Onagreae.

Oenothera biennis, Linné ...	...	...	—	—	—	Am.

Cacteae.

Opuntia Dillenii, Haworth ...	Prickly Pear-Cactus	—	—	—	Am.

Umbelliferae.

Ammi majus, Bauhin	...	...	E.	As.	Afr.	—
Carum Petroselinum, Bentham ...	Parsley	...	E.	As.	Afr.	—
Foeniculum officinale, Allioni ...	Fennel	...	E.	As.	Afr.	—
Crithmum maritimum, Linné ...	Real Samphire	...	E.	As.	Afr.	—
Peucedanum sativum, Bentham ...	Parsnip	...	E.	As.	—	—

Cucurbitaceae.

Cucumis myriocarpus, Naudin ...	...	...	—	—	Afr.	—

Rubiaceae.

Sherardia arvensis, Linné ...	...	...	E.	As.	Afr.	—
Galium Aparine, Linné	...	...	E.	As.	Afr.	—

Dipsaceae.

Scabiosa maritima, Linné ...	...	...	E.	As.	Afr.	—

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Compositae.

Erigeron linifolius, Willdenow ...	...	...	E.	As.	Afr.	—
Galinsoga parviflora, Cavanilles ...	...	...	—	—	—	Am.
Madia sativa, Molina	Pitch-Weed	...	—	—	—	Am.
Anthemis nobilis, Linné	True Chamomile	...	E.	As.	Afr.	—
Anthemis Cotula, Linné	Spurious Chamomile		E.	As.	Afr.	—
Cryptostemma calendulaceum, Br.	Cape-Weed	...	—	—	Afr.	—
Xanthium spinosum, Linné ...	Bathurst-Burr	...	E.	As.	Afr.	—
Carduus pycnocephalus, Jacquin ...	...	...	E.	As.	Afr.	—
Carduus crispus, Linné	...	..	E.	As.	Afr.	—
Carduus arvensis, Linné ...	Perennial Thistle	...	E.	As.	Afr.	—
Carduus lanceolatus, Linné ...	Spear-Thistle	...	E.	As.	Afr.	—
Carduus Marianus, Linné ...	Spotted Thistle	...	E.	As.	Afr.	—
Onopordon Acanthium, Linné ...	Scotch Thistle	...	E.	As.	Afr.	—
Cynara Scolymus, Linné ...	Artichoke	...	E.	As.	Afr.	—
Centaurea solstitialis, Linné ...	...	...	E.	As.	Afr.	—
Centaurea Melitensis, Linné ...	...	...	E.	As.	Afr.	—
Centaurea Calcitrapa, Linné ...	..	...	E.	As.	Afr.	—
Kentrophyllum lanatum, Candolle	...	...	E.	As.	Afr.	—
Carthamus tinctorius, Linné ...	Safflower	...	E.	As.	Afr.	—
Cichorium Intybus, Linné ...	Chicory	...	E.	As.	Afr.	—
Picris echioides, Linné	...	...	E.	As.	Afr.	—
Picris hieracioides, Linné ...	...	...	E.	As.	Afr.	—
Hypochaeris radicata, Linné ...	Flatweed	...	E.	As.	Afr.	—
Hypochaeris glabra, Linné ...	...	...	E.	As.	Afr.	—
Taraxacum officinale, Weber ..	Dandelion	...	E.	As.	Afr.	Am.
Lactuca saligna, Linné	...	...	E.	As.	Afr.	—
Sonchus oleraceus, Linné ...	Sow-Thistle	...	E.	As.	Afr.	—
Tragopogon porrifolius, Linné ...	Salsify	...	E.	As.	Afr.	—

Campanulaceae.

Lobelia Erinus, Linné		...	—	—	Afr.	—

Polemoniaceae.

Navarretia squarrosa, Hooker		...	—	—	—	Am.

Primulaceae.

Anagallis arvensis, Linné ...	Pimpernel	...	E.	As.	Afr.	—

Plantagineae.

Plantago lanceolata, Linné ...	Rib-Herb	...	E.	As.	Afr.	—
Plantago major, Camerarius ...	...	...	E.	As.	Afr.	—
Plantago Coronopus, Linné	...	...	E.	As.	Afr.	—

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Solanaceae.

Solanum Pseudo-Capsicum, Linné	...	...	—	—	—	Am.
Solanum Sodomaeum, Linné	...	...	E.	As.	Afr.	—
Lycium Chinense, Miller	...	..	—	As.	—	—
Nicotiana glauca, Graham	...	Tree-Tobacco	—	—	—	Am.
Datura Stramonium, Linné	...	...	—	—	—	Am.

Convolvulaceae.

Cuscuta Epithymum, Murray	...	Dodder	E.	As.	Afr.	—

Apocyneae.

Vinca rosea, Linné ...	...	Pink Periwinkle	—	As.	Afr.	—
Vinca major, Linné ...	...	Blue Periwinkle	E.	As.	Afr.	—

Asclepiadeae.

Gomphocarpus fruticosus, R. Br. ...	...		—	—	Afr.	—

Scrophularinae.

Verbascum Blattaria, Linné	...	Spurious Mullein	E.	As.	Afr.	—
Verbascum Creticum, F. v. M.	...	...	E.	—	—	—
Bartsia latifolia, Sibthorp	...	...	E.	As.	Afr.	—

Asperifoliae.

Lithospermum arvense, Linné	...	Gromwell	E.	As.	Afr.	—

Labiatae.

Marrubium vulgare, L'Ecluse	...	Horehound	E.	As.	Afr.	—
Rosmarinus officinalis, Linné	...	Rosemary	E.	As.	Afr.	—
Mentha Pulegium, Linné	...	Penny-Royal	E.	As.	Afr.	—

Irideae.

Romulea Bulbocodium, Sebastiani	...		E.	As.	Afr.	—
Sparaxis grandiflora, Ker	...	...	—	-	Afr.	—
Sisyrinchium Bermudianum, Linné	...		—	-	—	Am.
Sisyrinchium micranthum, Cavan.	...		—	-	—	Am.

Junceae.

Juncus bufonius, Linné ...	...	...	E.	As.	Afr.	Am.

Gramineae.

Paspalum distichum, Linné	...	Siltgrass	—	—	—	Am.
Stenotaphrum Americanum, Schr.		Buffalo-Grass	—	As.	Afr.	Am.
Ehrharta longiflora, Smith	...	...	—	—	Afr.	—
Andropogon Halepensis, Persoon	...	Haleppo-Grass	E.	As.	Afr.	—
Phalaris minor, Retzius ...	...	...	E.	As.	Afr.	—

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Phalaris Canariensis, Linné ...	Canaryseed-Grass...	E.	As.	Afr.	—	
Anthoxanthum odoratum, Linné ...	Scented Vernal-Grass	E.	As.	Afr.	—	
Alopecurus agrestis, Linné ...	... ...	E.	As.	Afr.	—	
Alopecurus pratensis, Linné ...	Foxtail-Grass ...	E.	As.	Afr.	—	
Phleum pratense, Linné	Timothy-Grass ...	E.	As.	Afr.	—	
Agrostis palustris, Hudson ...	Fiorin-Grass ...	E.	As.	Afr.	Am.	
Aira caryophyllea, Linné ...	... ...	E.	As.	Afr.	—	
Aira praecox, Linné	... ...	E.	As.	Afr.	—	
Polypogon Monspeliensis, Desfont.	... ...	E.	As.	Afr.	—	
Holcus lanatus, Linné	Yorkshire Fog-Grass	E.	As.	Afr.	—	
Holcus mollis, Linné	Creeping Velvet-Grass	E.	As.	Afr.	—	
Avena elatior, Linné	Meadow-Oatgrass...	E.	As.	Afr.	—	
Avena fatua, Linné	Wild Oats ...	E.	As.	Afr.	—	
Lamarckia aurea, Moench ...	... ...	E.	As.	Afr.	—	
Koeleria phleoides, Persoon ...	... ...	E.	As.	Afr.	—	
Koeleria cristata, Persoon ...	... ...	E.	As.	Afr.	—	
Cynosurus cristatus, Linné ...	Dogstail-Grass ...	E.	As.	Afr.	—	
Dactylis glomerata, Linné ...	Cocksfoot-Grass ...	E.	As.	Afr.	—	
Briza minor, Linné	... ...	E.	As.	Afr.	—	
Briza maxima, Linné	... ...	E.	As.	Afr.	—	
Poa annua, Linné	... ...	E.	As.	Afr.	—	
Poa pratensis, Linné	Common Poa ...	E.	As.	Afr.	Am.	
Poa trivialis, Linné	... ...	E.	As.	Afr.	—	
Festuca bromoides, Linné ...	... ...	E.	As.	Afr.	—	
Bromus sterilis, Gerarde ...	... ...	E.	As.	Afr.	—	
Bromus mollis, Linné	... ...	E.	As.	Afr.	—	
Bromus unioloides, Humboldt ...	Prairie-Grass ...	—	—	—	Am.	
Lolium perenne, Linné	Rye-Grass ...	E.	As.	Afr.	—	
Lolium temulentum, Linné ...	Darnel ...	E.	As.	Afr.	—	
Hordeum murinum, Caesalpinus ...	Barley-Grass ...	E.	As.	Afr.	—	
Hordeum nodosum, Linné ...	... ...	E.	As.	Afr.	—	

Additions.

Portulaceae.

Claytonia caulescens, F. v. M.	—	—	—	Am.	

Caryophylleae.

Saponaria vaccaria, Linné	E.	As.	Afr.	—	

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VERNACULAR NAMES OF INDIGENOUS PLANTS.

Avens	Geum urbanum.
Bamboo-Grass	Poa ramigera.
Beech, native...	Fagus Cunninghami.
Bellflower, Australian ...	Wahlenbergia gracilis.
Blackbutt-Tree	Eucalyptus pilularis.
Blackwood-Tree	Acacia Melanoxylon.
Bloodwood-Tree	Eucalyptus corymbosa.
Box-Eucalypt	Eucalyptus hemiphloia.
,, ...	Eucalyptus largiflorens.
Box-Eucalypt, Red	Eucalyptus polyanthema.
,, Yellow ...	Eucalyptus melliodora.
Bugle, native	Ajuga Australis.
Burr-Daisy	Calotis, several.
Buttercup	Ranunculus, several.
Carrot, native	Daucus glochidiatus.
Celery, native	Apium prostratum.
Cherry-Tree, native	Exocarpos cupressiformis.
Cider-Eucalypt	Eucalyptus Gunnii.
Clubmosses	Lycopodinæ.
Clubmoss, Medicinal	Lycopodium clavatum.
Couch-grass, native	Cynodon Dactylon.
Currajong	Brachychiton populneus.
,, ...	Plagianthus pulchellus.
Cypress-Pine...	Callitris, three species.
Daisy, imitative	Brachycome decipiens.
,, ...	Brachycome, some others.
Daisy, Burr-	Calotis, several.
Darling Poison-Pea	Swainsona Greyana.
Dock	Rumex, several.
Dodder, native	Cuscuta Australis.
,, ...	Cuscuta Tasmanica.
Doorva-Grass	Cynodon Dactylon.
Doubah	Marsdenia Leichhardtiana.
Doubletail	Diuris, several.
Duck-Weed	Lemna, several.

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Elder-tree, native ...	... Sambucus xanthocarpa.
Elder-herb	... Sambucus Gaudichaudi.
Everlastings	... Helichrysum lucidum.
,, ...	... Helichrysum, some others.
,, ...	... Helipterum incanum.
,, ...	... Helipterum, some others
Fan-Palm	... Livistona Australis.
Ferns	... Filices.
Fern, Birdsnest- ...	... Asplenium Nidus.
Fern, Brake- ...	... Pteris aquilina.
Fern, Maidenhair- ...	... Adiantum Aethiopicum.
Ferntree, slender ...	... Alsophila Australis.
Ferntree, square ...	... Osmunda barbara.
Ferntree, stout ...	... Dicksonia Billardieri.
Figtree, native ...	... Ficus scabra.
Flax, native	... Linum marginale.
Forget-me-not, small ...	... Myosotis Australis.
,, large ...	... Myosotis suaveolens.
Foxtail-grass... ...	... Alopecurus geniculatus (here).
Fringe-Lilies	... Thysanotus, several.
Germander	... Teucrium, several.
Grape-vine, native ...	... Vitis hypoglauca.
,, ...	... Vitis Baudiniana.
Grasses	... Gramineæ.
Grass-tree	... Xanthorrhoea Australis.
Grass-wrack	... Zostera, two.
Gumtree, apple-scented	... Eucalyptus Stuartiana.
Gumtree, blue ...	... Eucalyptus Globulus.
Gumtree, flooded ...	... Eucalyptus tereticornis.
Gumtree, Giant ...	... Eucalyptus regnans.
Gumtree, Manna- ...	... Eucalyptus viminalis.
Gumtree, red... ...	... Eucalyptus rostrata.
Gumtree, spotted, Victorian	... Eucalyptus goniocalyx.
Gumtree, sugary ...	... Eucalyptus corynocalyx.
Gumtree, white... ...	... Eucalyptus pauciflora.
,, ...	... Eucalyptus, some others.
Honeysuckle, native ...	... Banksia, several.
Ironbark-tree ...	... Eucalyptus Leucoxylon (here).
Ironbark-tree, spurious	... Eucalyptus Sieberiana.
Kangaroo-grass ...	... Anthistiria ciliata.

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Lady's Mantle	Alchemilla vulgaris.
Lilly-pilly	Eugenia Smithii.
Lily, Murray-	Crinum flaccidum.
Mahogany-Eucalypt	Eucalyptus botryoides.
Mallee	Eucalyptus gracilis.
,, ...	Eucalyptus uncinata.
,, ...	Eucalyptus oleosa.
,, ...	Eucalyptus incrassata.
Mangrove, spurious	Avicennia officinalis.
Manna-grass	Poa fluitans.
Messmate-Stringybarktree ...	Eucalyptus obliqua.
Mint or Ment	Mentha, several.
Mistletoe, native	Loranthus, several.
Mousetail	Myosurus minimus.
Mulga	Acacia aneura.
Muntry	Kunzea pomifera.
Musk-tree	Aster argophyllus.
Myall	Acacia homalophylla.
Nardoo	Marsilea quadrifolia.
Peppermint-Gumtree	Eucalyptus amygdalina
Peppermint-Stringybarktree ...	Eucalyptus piperita.
Pepper-tree, native	Drimys aromatica.
Pig-face	Mesembrianthemum, two.
Polygonum, wiry	Muehlenbeckia Cunninghami.
Poppy, native	Papaver aculeatum.
Porcupine-Grass	Triodia irritans.
Quandang	Santalum acuminatum.
Raspberry, native	Rubus parvifolius.
Reed-mace	Typha angustifolia.
Rib-Herb, Australian	Plantago varia.
Rushes	Junceae and Cyperaceae collectively (here).
Sage, Australian	Salvia plebeja.
Saltbushes	Salsolaceae in general.
Sandstay	Leptospermum laevigatum.
Sarsaparilla, native	Smilax Australis.
Sassafras, native	Atherosperma moschatum.
Sea-Rocket	Cakile maritima.
Sedges	Junceae and Cyperaceae collectively (here).

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Sheoak	... Casuarina quadrivalvis.
Silverweed, British ...	... Potentilla anserina.
Sneezeweed	... Centipeda, three species.
Speedwell	... Veronica, several.
Spider-Orchid ..	... Caladenia Patersoni.
Spinage, New Zealand...	... Tetragonia expansa.
Spurge, native ...	... Euphorbia, several.
Stringybark-Tree ...	... Eucalyptus capitellata.
,, ...	... Eucalyptus eugenioides.
,, ...	... Eucalyptus macrorrhyncha.
Sugar-Reedgrass ...	... Imperata arundinacea.
Sundew	... Drosera, several.
Sword-rush	... Lepidosperma gladiatum.
Tea-tree, Swamp ...	... Melaleuca ericifolia, chiefly.
,, ...	... Melaleuca, several others.
,, ...	... Leptospermum, several.
,, Coast ...	... Leptospermum laevigatum.
Thatch-Reed	... Arundo Phragmites.
Tobacco, Australian ...	... Nicotiana suaveolens.
Vervain	... Verbena officinalis.
Waratah, Gippsland ...	... Telopea oreades.
Wattle, black ...	... Acacia mollisima.
Wattle, golden ...	... Acacia pycnantha.
Wattle, Silver- ...	... Acacia dealbata.
Wattle, Sydney- ...	... Acacia decurrens.
Wood-sorrel, native ...	... Oxalis Magellanica.
Woolly Butt	... Eucalyptus longifolia.

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LIST OF GENERA COMPRISING:—

Large Trees—

Atherosperma, Hedycarya, Pittosporum, Acronychia, Nephelium, Elaeocarpus, Brachychiton, Fagus, Casuarina, Acacia, Eucryphia, Eugenia, Angophora, Eucalyptus, Tristania, Pomaderris, Lomatia, Banksia, Exocarpos, Aster, Senecio, Notelaea, Myrsine, Ehretia, Prostanthera, Myoporum, Callitris, Livistona.

Climbing or Twining Plants—

Clematis, Hibbertia, Sarcopetalum, Stephania, Cassytha, Drosera, Comesperma, Billardiera, Marianthus, Celastrus, Zygophyllum, Tetragonia, Stellaria, Claytonia, Muehlenbeckia, Rhagodia, Kennedya, Glycine, Rubus, Aphanopetalum, Vitis, Melothria, Sicyos, Passiflora, Morinda, Jasminum, Cuscuta, Convolvulus, Tylophora, Daemia, Marsdenia, Lyonsia, Tecoma, Smilax, Rhipogonum, Eustrephus, Geitonoplesium, Thysanotus, Calostrophus, Ehrharta.

Parasitic or simply Epiphytal Plants—

Cassytha, Notothixos, Loranthus, Thesium, Cuscuta, Orobanche, Fieldia, Dipodium, Gastrodia, Dendrobium, Sarcochilus, Chiloglottis, Corysanthes.

Floating or Submerged Plants—

Ranunculus, Ceratophyllum, Cabomba, Jussieua, Myriophyllum, Callitriche, Hydrocotyle, Limnanthemum, Utricularia, Limosella, Ottelia, Vallisneria, Elodea, Lemna, Wolffia, Potamogeton, Ruppia, Najas, Althenia.

Oceanic: Halophila, Posidonia, Cymodocea, Zostera.

Plants mainly prostrate—

(*a*) Somewhat woody—Hibbertia, Atriplex, Muehlenbeckia, Pultenaea, Platylobium, Kunzea, Adenanthos, Grevillea, Styphelia, Myoporum, Nageia.

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(b) Almost or quite herbaceous—Cakile, Stackhousia, Zygophyllum, Tribulus, Euphorbia, Australina, Mollugo, Mesembrianthemum, Tetragonia, Colobanthus, Portulaca, Polygonum, Ptilotus, Polycnemum, Chenopodium, Dysphania, Bassia, Kochia, Enchylaena, Threlkeldia, Bossiaea, Desmodium, Psoralea, Trigonella, Kennedya, Glycine, Swainsona, Glycyrrhiza, Pimelea, Acaena, Potentilla, Oreomyrrhis, Hydrocotyle, Apium, Eryngium, Melothria, Coprosma, Cotula, Centipeda, Leontopodium, Scaevola, Lobelia, Isotoma, Selliera, Goodenia, Wilsonia, Dichondra, Heliotropium, Mentha, Glossostigma, Mimulus.

(c) Grasses or Grass-like—Zostera, Oreobolus, Ehrharta, Hemarthria, Zoysia, Sporobolus, Cynodon, Distichlis, Spinifex.

Thorny or prickly or otherwise pungently pointed plants—

(a) Their branches—Lepidium, Hymenanthera, Bursaria, Nitraria, Muehlenbeckia, Rhagodia, Kochia, Acacia, Daviesia, Eutaxia, Bossiaea, Rubus, Colletia, Cryptandra, Exocarpos, Leptomeria, Coprosma, Scaevola, Lycium, Wilsonia, Prostanthera, Eremophila, Smilax, Rhipogonum.

(b) Their leaves—Hibbertia, Stellaria, Scleranthus, Colobanthus, Salsola, Acacia, Daviesia, Oxylobium, Platylobium, Pultenaea, Bossiaea, Eryngium, Aciphylla, Melaleuca, Callistemon, Leptospermum, Isopogon, Lomatia, Grevillea, Hakea, Banksia, Solanum, Styphelia, Epacris, Sprengelia, Richea, Westringia, Xerotes, Xanthorrhoea, Calectasia, Bartlingia, Livistona, Juncus, Calostrophus, Restio, Oreobolus, Lepidosperma, Scirpus, Ehrharta, Stipa, Zoysia, Spinifex, Distichlis, Eragrostis, Triodia, Festuca, Arundo.

(c) Their flowers or fruits—Eriostemon, Tribulus, Abutilon, Ricinocarpus, Fagus, Casuarina, Tetragonia, Rumex, Bassia, Daviesia, Acaena, Geum, Calycothrix, Ceratophyllum, Daucus, Sicyos, Hakea, Glossogyne, Bidens, Calotis, Athrixia, Cynoglossum, Lappula, Burchardia, Xanthorrhoea, Damasonium, Sparganium, Ehrharta, Andropogon, Anthistiria, Pentapogon, Stipa, Aristida, Echinopogon, Oplismenus, Panicum, Spinifex, Chloris, Agropyron, Bromus, Danthonia.

Normally minute plants—

(a) Erect or ascending—Myosurus, Menkea, Alyssum, Capsella, Drosera, Poranthera, Sagina, Scleranthus, Tillaea, Ammannia, Hydrocotyle, Didiscus, Asperula, Galium, Brachycome, Cotula, Elachanthus, Helipterum, Stuartina, Rutidosis, Angianthus, Skirrophorus, Toxanthus, Millotia, Candollea, Leeuwenhoekia, Sebaea, Mitrasacme, Rochelia, Eritrichum, Utricularia, Polypompholyx, Microtis, Bartlingia, Triglochin, Eriocaulon, Trithuria, Aphelia, Centrolepis, Cyperus, Schoenus, Scirpus.

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(b) Prostrate—Elatine, Euphorbia, Sagina, Scleranthus, Dysphania, Callitriche, Coprosma, Chthonocephalus, Hyalolepis, Isoetopsis, Gnaphalodes, Isotoma, Lobelia, Wilsonia, Mentha, Limosella, Glossostigma, Lemna and Wolffia (the last two floating).

Plants mostly or entirely restricted to the Coast—

Cakile, Lepidium, Correa, Stackhousia, Ricinocarpus, Beyeria, Tetragonia, Polycnemum, Salicornia, Atriplex, Rhagodia, Suaeda, Threlkeldia, Statice, Acacia, Pimelea, Potentilla, Leptospermum, Kunzea, Didiscus, Apium, Banksia, Aster, Cassinia, Helichrysum, Calocephalus, Senecio, Selliera, Scaevola, Styphelia, Avicennia, Cymodocea, Posidonia, Zostera, Althenia, Juncus, Lepidosperma, Lepturus, Zoysia, Spinifex, Sporobolus, Stipa, Distichlis, Festuca, Poa.

Plants restricted to Alpine or Sub-Alpine Elevations—

Ranunculus, Caltha, Drosera, Eriostemon, Boronia, Stackhousia, Geranium, Colobanthus, Scleranthus, Acacia, Oxylobium, Pultenaea, Pimelea, Drapetes, Alchemilla, Baeckea, Aciphylla, Huanaca, Azorella, Oreomyrrhis, Didiscus, Seseli, Orites, Grevillea, Exocarpos, Brachycome, Aster, Abrotanella, Cotula, Antennaria, Leontopodium, Lobelia, Velleya, Plantago, Styphelia, Trochocarpa, Epacris, Richea, Gaultiera, Wittsteinia, Prostanthera, Euphrasia, Veronica, Nageia, Astelia, Herpolirion, Juncus, Restio, Oreobolus, Lepidosperma, Carpha, Carex, Uncinia, Agrostis, Festuca.

Plants with whitish sap—

Euphorbia, Ficus, Microseris, Cymbonotus, Wahlenbergia, Isotoma, Lobelia, Convolvulus, Sarcostemma, Tylophora, Daemia, Marsdenia Lyonsia.

Plants with compound or with much dissected leaves—

(a) With regularly pinnate leaves—Boronia, Dodonaea, Nephel ..., Acacia, Cassia, Indigofera, Swainsona, Glycyrrhiza, Eucryphia, Panax, Sambucus, Tecoma.

(b) With regularly trifoliolate leaves—Zieria, Boronia, Oxalis, Micrantheum, Gompholobium, Goodia, Desmodium, Lespedeza, Psoralea, Lotus, Trigonella, Kennedya, Glycine, Jasminum.

(c) With irregularly compound or deeply dissected leaves—Ranunculus, Clematis, Ceratophyllum, Drosera, Zygophyllum, many of Cruciferae, Zornia, Psoralea, Acaena, Potentilla, Geum, Rubus, Vitis, Myriophyllum, Haloragis, Panax, many of Umbelliferae, Isopogon, Adenanthos, Grevillea, Bidens, Glossogyne, Brachycome, Calotis, Cotula, Leuzea, Senecio, Isotoma, Goodenia, Utricularia, Verbena, Livistona.

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Plants with whorled leaves—

Ceratophyllum, Tetratheca, Casuarina (rudimentary), Polycarpon, Mollugo, Acacia (phyllodes), Mirbelia, Oxylobium, Pultenaea, Aotus, Bauera, Lythrum, Myriophyllum, Banksia, Asperula, Galium, Lysimachia, Alyxia, Westringia, Stemodia, Chloanthes, Callitris (rudimentary), Elodea, Najas.

Plants with rudimentary or deficient leaves—

Cassytha, Comesperma, Tethratheca, Amperea, Casuarina, Muehlenbeckia, Salicornia, Kochia, Acacia, Cassia, Jacksonia, Viminaria, Sphaerolobium, Daviesia, Bossiaea, Templetonia, Colletia, Loudonia, Trachymene, Exocarpos, Omphacomeria, Choretrum, Leptomeria, Aster, Helichrysum, Humea, Sarcostemma, Logania, Cuscuta, Callitris, Dipodium, Gastrodia, Corynotheca, Calostemma (sometimes), Caustis, Lepidosperma, Cyperus, Schoenus, Scirpus, Heleocharis.

Plants with dotted leaves—

Drimys, Atherosperma, all of Rutaceae, Hypericum, Dodonaea, Psoralea, Glycyrrhiza, all of Myrtaceae here, Aster, Cassinia, Humea and some others of Compositae exceptionally, Anagallis, Myrsine, Stemodia (exceptionally), many of Labiatae, Myoporum.

Plants with strongly odorous leaves—

Drimys, Eupomatia, Atherosperma, most of Cruciferae, Capparis, all of Rutaceae, Dodonaea, Codonocarpus, Trigonella, all of Myrtaceae here, Aciphylla, Apium, Daucus, Eryngium, Opercularia, Coprosma, Aster, Erechtites, Humea, Senecio, Isotoma, Mentha, Prostanthera, Callitris, Glossodia, Andropogon, Poa (exceptionally), Hierochloa.

Plants with very succulent leaves—

Cabomba, Cakile, Nitraria, Zygophyllum, Plagianthus, Claytonia, Portulaca, Polycnemum, Atriplex, Rhagodia, Kochia, Suaeda, Enchylaena, Threlkeldia, Mesembrianthemum, Tetragonia, Crantzia, Apium, Senecio, Lobelia, Selliera, Limnanthemum, Lycium, Samolus, Wittsteinia, Myoporum, Dendrobium, Ottelia, Calostemma, Bulbine, Typha, Triglochin.

Plants with large individual flowers—

Clematis, Capparis, Correa, Pelargonium, Lavatera, Mesembrianthemum, Ptilotus, Kennedya, Eucalyptus, Melaleuca, Callistemon, Passiflora, Loranthus, Telopea, Nicotiana, Epacris, Styphelia (seldom), Convolvulus, Fieldia, Eremophila, Dendrobium, Caladenia, Diuris, Ottelia, Patersonia, Diplarrhena, Crinum, Herpolirion.

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Plants with flowers of blue tinge (petals or corolla-lobes)—

Hybanthus, Viola, Polygala, Comesperma, Cheiranthera, Boronia (seldom), Erodium, Linum, Howittia, Hovea, Psoralea, Kennedya, Swainsona, Didiscus, Eryngium, Conospermum, Calotis, Minuria, Erigeron, Vittadinia, Aster, Brachycome, Lagenophora (of the last seven the outer corollas only), Wahlenbergia, Isotoma, Lobelia, Brunonia, Dampiera, Scaevola, Solanum, Halgania, Cynoglossum, Myosotis, Plectranthus, Brunella, Salvia, Westringia, Ajuga, Scutellaria, Prostanthera, Utricularia, Glossostigma, Euphrasia, Mazus, Mimulus, Stemodia, Veronica, Thelymitra, Caladenia, Glossodia, Sisyrinchium, Patersonia, Herpolirion, Stypandra, Dianella, Chamaescilla, Caesia, Calectasia.

Plants with flowers of a red tinge (petals or corolla-lobes, seldom stamens only)—

Papaver, Cakile, Drosera, Polygala, Comesperma, Zieria, Boronia, Eriostemon (seldom), Correa, Pelargonium, Tetratheca, Mesembrianthemum, Spergularia, Saponaria, Polygonum, Frankenia, Pultenaea and Daviesia (seldom), Kennedya, Indigofera, Psoralea, Swainsona, Desmodium, Bauera, Eucalyptus (exceptionally), Melaleuca (seldom), Callistemon, Lythrum, Passiflora, Loranthus, Telopea, Grevillea, Leuzea, Humea, Candollea, Goodenia (seldom), Erythraea, Brachyloma, Styphelia, Epacris, Sprengelia, Convolvulus, Prostanthera (seldom), Eremophila, Dipodium, Caleya, Spiranthes, Thelymitra, Corysanthes, Lyperanthus, Caladenia, Calostemma, Eustrephus, Arthropodium, Thysanotus, Sowerbaea.

Plants with very fragrant flowers—

Clematis, Atherosperma, Eupomatia, Hymenanthera, Pittosporum, Ricinocarpus, Stackhousia, Cassia, Acacia, Scaevola, Jasminum, Cynoglossum, Heliotropium, Nicotiana, Dendrobium, Sarcochilus, Gastrodia, Thelymitra, Caladenia, Calostemma, Arthropodium, Bulbine, Hierochloa.

Plants with normally two stamens—

Lepidium (seldom), Polycnemum, Scleranthus, Acaena, Pimelea, Jasminum, Notelaea, Salvia, Lycopus, Utricularia, Polypompholyx, Gratiola, Veronica, Diplarrhena, Ruppia, Ehrharta, Cyatochaete, Hierochloa, Eragrostis.

Plants with normally four stamens—

Lepidium, Parietaria, Sagina, Alchemilla, Tillaea, Loudonia, Haloragis (seldom), Drapetes, all of Proteaceae, Santalum, Galium, Asperula, Sebaea, Mitrasacme, Plantago, Orobanche, Fieldia, most of Labiatae and of Scrophularinae, Tecoma, Avicennia, Chloanthes, Verbena, Potamogeton, Cymodocea, Ehrharta.

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Plants with normally six stamens—

Most of Cruciferae, Pseudanthus, Rumex, Polygonum, Alisma, Damasnium, Triglochin, Livistona, most of Amaryllideae and of Liliaceae, Juncus, Luzula, Eriocaulon.

Plants with normally eight stamens—

Polygala, Comesperma, Acronychia, Boronia, Correa, Tetratheca, Zygophyllum, Polygonum, Muehlenbeckia, Aphanopetalum, Epilobium, Myriophyllum, Haloragis.

Plants with their stamens all opposite to the petals or to the corolla-lobes—

Statice, all of Rhamnaceae, of Santalaceae, of Proteaceae and of Loranthaceae, Vitis, Myrsine, all of Primulaceae, Sowerbaea, Xyris.

Plants with their filaments all or nearly all connate—

(a) Together with the style—Candollea, Leeuwenhoekia, all of Orchideae.

(b) Around the style—Pelargonium, Geranium, Erodium, all of Malvaceae, Brachychiton, Passiflora, all of Asclepiadeae, Sisyrinchium, Patersonia, Calostemma.

(c) Aside of the style—Hibbertia (here seldom), Platylobium, Bossiaea, Templetonia, Hovea, Goodia, Trigonella, Lotus, Psoralea, Indigofera, Goodia, Glycyrrhiza, Swainsona, Zornia, Desmodium, Lespedeza, Kennedya, Glycine.

(d) Unaccompanied by any style—Sarcopetalum, Stephania, Plagianthus, Ricinocarpus, Bertya, Sicyos, Melothria.

Plants with their anthers connate—

Cheiranthera, all of Compositae, Isotoma, Lobelia, Brunonia, Dampiera, Solanum, all of Asclepiadeae, Lyonsia, Halgania, Utricularia, Polypompholyx, Calectasia, Althenia, Cymodocea.

Plants with their stamens and their pistils separate in all or many of the flowers—

Clematis, Atherosperma, Hedycarya, Ceratophyllum, Sarcopetalum, Stephania, Dodonaea (partially), Brachychiton, Plagianthus, all of Euphorbiaceae, Australina, Casuarina, Didymotheca, Codonocarpus, Rumex,

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Muehlenbeckia, Atriplex, Rhagodia, Myriophyllum, Haloragis, Aciphylla, Melothria, Sicyos, Coprosma, Ethuliopsis, Antennaria, Leontopodium, Lobelia, Vallisneria, Halophila, Elodea, Smilax, Wurmbea, Xerotes, Typha, Sparganium, Najas, Althenia, Cymodocea, Lepyrodia, Restio, Leptocarpus, Calostrophus, Lepidobolus, Uncinia, Carex, Caustis, Spinifex, Distichlis.

(The separation of stamens and pistils through bracts within spikelets of many Cyperaceae and Gramineae is left out of consideration.)

Plants with fruits divided into distinct fruitlets—

All of Ranunculaceae and of Dilleniaceae, Drimys, Cabomba, Atherosperma, Hedycarya, Sarcopetalum, Stephania, Correa, Zieria, Boronia, Eriostemon, Geijera (last five incompletely), Brachychiton, Geum, Potentilla, Rubus, Tillaea, Dichondra, Sarcostemma, Tylophora, Daemia, Marsdenia, Lyonsia, Alyxia, most of Asperifoliae and of Labiatae (but imperfectly), Verbena, Alisma, Damasonium, most of Fluviales, Livistona (reduced to one).

Plants with succulent fruits—

(a) Black or otherwise dark-colored outside—Drimys, Nitraria, Threlkeldia, Vitis, Pimelea (seldom), Loranthus, Solanum, Jasminum, Notelaea, Myoporum, Eremophila, Smilax, Geitonoplesium, Livistona.

(b) Blue outside—Elaeocarpus, Billardiera, Trochocarpa, Myoporum, Drymophila, Dianella.

(c) Red outside—Sarcopetalum, Stephania, Tetragonia, Rhagodia, Enchylaena, Rubus, Pimelea (seldom), Exocarpos (fruit-stalklet), Santalum, Coprosma, Morinda, Lycium, Solanum, Styphelia, Ehretia, Alyxia, Nageia (fruit-stalklet), Rhipogonum, Astelia.

(d) Yellow outside—Hedycarya, Cassytha, Acronychia, Billardiera, Nitraria, Muehlenbeckia, Pimelea, Rhagodia, Enchylaena, Coprosma, Sambucus, Styphelia, Solanum, Myoporum, Eustrephus.

(e) Green outside—Cassytha, Capparis, Tetragonia, Passiflora, Loranthus, Persoonia, Omphacomeria, Leptomeria, Selliera, Styphelia, Brachyloma, Solanum, Avicennia, Ottelia, Calostemma, Bulbine, Posidonia.

(f) Whitish outside—Muehlenbeckia, Eugenia, Sambucus, Gaultiera, Fieldia, Styphelia, Wittsteinia.

(g) Variously of other scarcely determinable colors outside—Hymenanthera, Mesembrianthemum, Kunzea, Loranthus, Santalum, Solanum, Crinum.

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Plants with large or long fruits—

Cardamine, Sisymbrium, Erysimum, Capparis, Brachychiton, Mesembrianthemum, Acacia, Cassia, Lotus, Kennedya, Indigofera, Swainsona, Epilobium, Passiflora, Isopogon (unitedly), Lomatia, Telopea, Banksia (unitedly), Sarcostemma, Marsdenia, Tylophora, Daemia, Lyonsia, Tecoma, Callitris (their cover), Ottelia, Crinum.

These tabular compilations are offered, to aid in the search for the names of plants, and should be used by any juvenile beginner in the study of our native flora; they apply so far to Victorian plants only, but are in many cases restricted to one or two or few species within the genera indicated; all Ferns and their allies are here left out of consideration.

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ADDITIONS AND ALTERATIONS.

PART I.

Page 3, line 16, instead of 11 read 113.
12, line 19, add 286.
12, line 27, add 287.
12, line 39, add 288.
13, line 14, add 289.
13, line 25, add 298.
13, line 29, add Adenostemma, Bidens.
25, line 22, add 600.
56, line 31, read umbel-stalk instead of flower-stalks
58, after line 12, add—

Synpetaleae perigynae.

59, line 33, add (Pentadactylon, Linkia).
64, line 15, after broad add or narrow.
75, after line 10, add—

Synpetaleae hypogynae.

86, after line 22, add—

Calyceae perigynae.

93, after line 21, add—

Calyceae hypogynae.

103, at commencement, add—

Acalyceae hypogynae.

103, line 28, after three add or two.
104, line 8, after several add sometimes in two rows.
108, line 13, add or about as long.
111, line 13, add (Trisetum).
224, line 30, instead of 053 read 1053.
288, line 33, after reddish add or green.
305, line 31, add (Exception: B. pachyptera partly).
346, line 36, after bluish add or lilac.
377, lines 22, 31, and 39, put gynostegium instead of gynosteminm.

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382, line 22, instead of 675 read 1675.
408, line 19, after bluish add or almost pink.
416, line 10, omit 1797*b*.
416, line 26, after bluish add or almost lilac.

PART II.

Page 14, line 30, add figure 35.
16, line 5, add figure 36.
27, line 26, add figure 64.
35, line 37, instead of A. Reichenbach read A. Richard.
45, line 6, add figure 112.
46, line 39, add figure 113.
47, line 11, add figure 114.
47, line 23, add figure 115.
47, line 33, add figure 116.
47, line 39, add figure 117.
48, line 16, add figure 118.
48, line 26, add figure 119.
50, line 25, add figure 120.
50, line 32, add figure 121.
50, line 35, add figure 122.
51, line 7, add figure 123.
51, line 40, add figure 124.
53, line 35, add figure 125.
56, line 5, add figure 126.
58, line 28, add figure 127.
58, line 30, add figure 128.
58, line 37, add figure 129.
Page 58, line 39, add figure 130.
59, line 5, add figure 131.
59, line 14, add figure 132.
59, line 16, add figure 133.
59, line 19, add figure 134.
59, line 23, add figure 136.
59, line 28, add figure 137.
59, line 31, add figure 135.
59, line 33, add figure 138.
59, line 35, add figure 139.
59, line 39, add figure 140.
59, line 41, add figure 141.
59, line 43, add figure 142.
60, line 3, add figure 143.
60, line 4, add figure 144.
60, line 6, add figure 145.
60, line 17, add figure 146.
60, line 21, add figure 147.
60, line 24, add figure 148.
60, line 28, add figure 149.
60, line 37, add figure 150.
60, line 44, add figure 151.
60, line 48, add figure 152.

In figure 58, 4, pores of anthers should be terminal, not lateral.

At figure 127B, first line, add and one caselet of microsporangia or antheroid-clusters.

At figure 127B, second line, read former instead of latter.

At figure 127B, sixth and eighth lines, read macrosporangium instead of macrospore.

At figure 128B, lines 17, 19, 21, and 23, add or antheroid.

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Zoysia, i. 108, 481; ii. 55.
Zygophylleae, i. 6, 32, 150; ii. 10, figures 16, 17.
Zygophyllum, i. 32, 150; ii. 10, figure 16.

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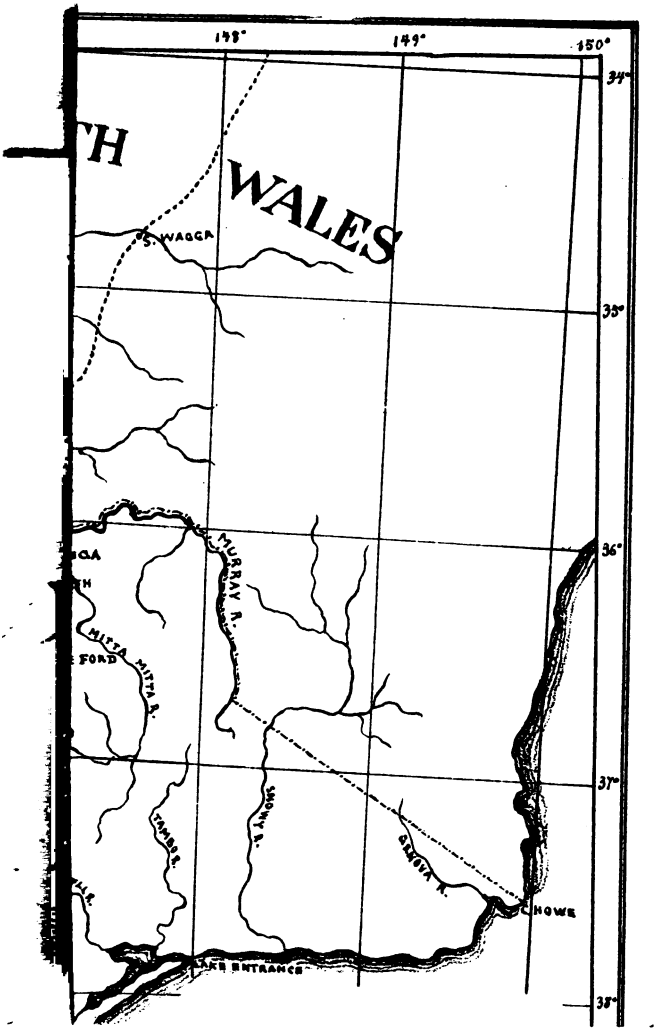

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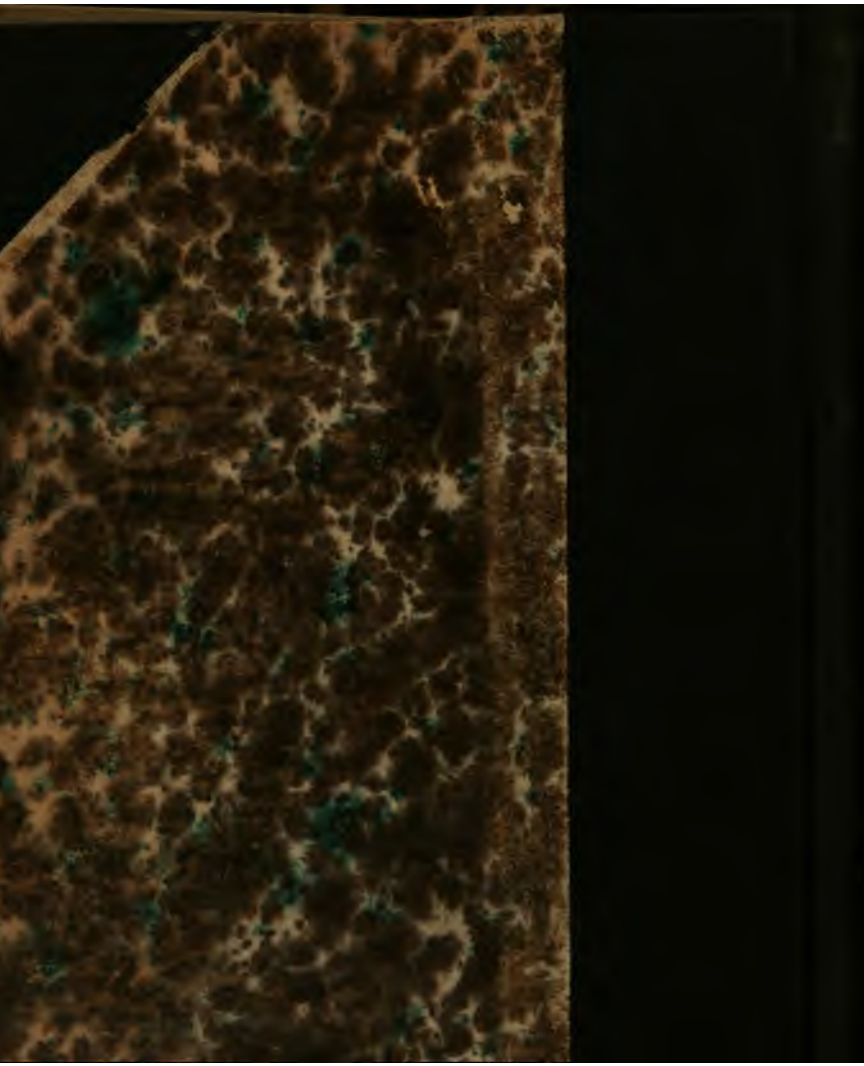

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